

TCEQ AIR QUALITY PERMIT NUMBER 140792, PSDTX1498, and GHGPSDTX158

APPLICATION BY § **BEFORE THE**
RIO GRANDE LNG LLC § **TEXAS COMMISSION ON**
RIO GRANDE LNG AND RIO BRAVO §
PIPELINE FACILITY § **ENVIRONMENTAL QUALITY**
BROWNSVILLE, CAMERON COUNTY §

EXECUTIVE DIRECTOR'S RESPONSE TO PUBLIC COMMENT

The Executive Director of the Texas Commission on Environmental Quality (the commission or TCEQ) files this Response to Public Comment (Response) on the New Source Review Authorization application.

As required by Title 30 Texas Administrative Code (TAC) § 55.156, before an application is approved, the Executive Director prepares a response to all timely, relevant and material, or significant comments. A list of all persons who submitted timely comments to the Office of the Chief Clerk is included as Attachment A. A list of commonly used acronyms is included as Attachment B.

This Response addresses all timely public comments received, whether or not withdrawn. If you need more information about this permit application or the permitting process, please call the TCEQ Public Education Program at 1-800-687-4040. General information about the TCEQ can be found at our website at www.tceq.texas.gov.

BACKGROUND

Description of Plant

Rio Grande LNG LLC (Applicant) has applied to the TCEQ for a New Source Review Authorization under Texas Clean Air Act (TCAA) § 382.0518. This will authorize the construction of a new facility that may emit air contaminants.

This permit will authorize the Applicant to construct a natural gas liquefaction facility and liquefied natural gas (LNG) export terminal (Terminal). In addition, a pipeline compressor station (Compressor Station 3), which is owned and operated by the Rio Bravo Pipeline Company LLC, will be located within the fence line of the Terminal. The emissions from Compressor Station 3 will be aggregated with the Terminal emissions for the Prevention of Significant Deterioration (PSD) analysis. The Terminal will have six liquefaction trains with a combined export capacity of 1.2 trillion Standard Cubic Feet (SCF) of natural gas per annum. The facility is proposed to be located on State Highway 48 approximately 15.2 miles to the east-northeast of the intersection of State Highway 48 and State Highway 4. The facility's southern border is the Brownsville ship channel, Brownsville, Cameron County. Contaminants authorized under this permit include: carbon monoxide, nitrogen oxides, organic compounds, particulate matter including particulate matter with diameters of 10 microns or less (PM_{10}) and 2.5

microns or less ($PM_{2.5}$), greenhouse gases, hydrogen sulfide, hazardous air pollutants, sulfur dioxide, and sulfuric acid mist.

Procedural Background

Before work begins on the construction of a new facility that may emit air contaminants, the person planning the construction must obtain a permit from the commission. This permit application is for an initial issuance of Air Quality Permit Number 140792, PSDTX1498, and GHGPSDTX158.

The permit application was received on May 18, 2016 and declared administratively complete on June 3, 2016. The Notice of Receipt and Intent to Obtain an Air Quality Permit (first public notice) for this permit application was published in English on June 22, 2016, in *The Brownsville Herald*, and in Spanish on June 22, 2016, in *El Nuevo Heraldo*. A combined Notice of Application and Preliminary Decision and Notice of Public Meeting (second public notice) was published in English on February 22, 2018, in *The Brownsville Herald*, and in Spanish on February 22, 2018, in *El Nuevo Heraldo*. A public meeting was held on March 8, 2018, in Brownsville, Cameron County. The public comment period ended on March 26, 2018. Because this application was received after September 1, 2015, it is subject to the procedural requirements of and rules implementing Senate Bill 709 (84th Legislature, 2015).

COMMENTS AND RESPONSES

COMMENT 1: State and Local Officials

Texas State Representative René O. Oliveira and the City of Port Isabel requested a public meeting be held on the application.

RESPONSE 1:

The TCAA and the TCEQ rules require that the Executive Director hold a public meeting when requested by a member of the legislature representing the area in which the proposed facility is to be located or if the Executive Director determines that there is a substantial or significant degree of public interest. A public meeting was held on March 8, 2018, at the Brownsville Event Center, in Brownsville, Texas. The notice of public meeting was published in English, on February 22, 2018, in *The Brownsville Herald* and in Spanish, on February 22, 2018, in *El Nuevo Heraldo*. The formal comments received at the public meeting are included and addressed in the remainder of this Response.

COMMENT 2: Public Meeting

Commenters expressed concern that the Executive Director issued a preliminary determination on the application prior to the public meeting. (Marjorie Jacobs, Louise Reavis)

Additionally, commenters expressed concern about the length of time allowed for informal question and answers at the public meeting. (Marjorie Jacobs, Pearl Fry)

Commenters also expressed concern about the location of the public meeting. Specifically, commenters stated that having the meeting at the Brownsville Event Center created an undue burden for citizens, especially those who rely on bicycle or public transportation. In addition, Marjorie Jacobs stated that the meeting was held at the beginning of spring break when residents of South Padre Island do not travel off the island due to the added seasonal traffic. Vecinos Para el Bienestar de la Comunidad Costera and Shrimpers and Fisherman of the RGV (VPBCC and SFRGV, respectively) stated that TCEQ did not consider the environmental justice implications of holding the public meeting at a location that was approximately a 40-minute drive for residents, many of whom have limited access to transportation which impaired their ability to participate in the public comment process. The City of Port Isabel offered to host the public meeting at any of its event centers.

(City of Port Isabel, Maria Galasso, Marjorie Jacobs)

RESPONSE 2:

As described in Response 19 below, the Executive Director is required to issue a preliminary determination on applications at a certain stage in the application process. The public meeting format provides an opportunity for interested persons to ask the TCEQ and the Applicant questions in both an informal (question and answer) discussion and a formal comment period. As explained at the public meeting, informal comments and questions are answered at the meeting but do not become part of the formal record for an application. During the informal session, the public is given the opportunity to ask questions of both TCEQ staff and representatives of the applicant. Occasionally, when there are a large number of people at the public meeting or the venue has a time constraint, the informal question and answer period must be limited to allow ample time for individuals to make their formal comments on the record. Individuals are encouraged to contact the TCEQ or the applicant with any further questions they may have. During the formal comment period, interested persons may make comments which are recorded and become part of the formal record. All formal comments received during the meeting, as well as those comments submitted in writing during the public comment period, are considered before a final decision is reached on the permit application.

As described in Response 1 above, a public meeting was held at the Brownsville Event Center in Brownsville. Public meetings are scheduled based on many factors such as the availability of applicant representatives, TCEQ representatives, interested elected state officials, the estimated number of attendees, venue capacity and availability, and federal or state holidays. The Brownsville location was selected by the TCEQ Office of the Chief Clerk and the applicant in consultation with Representative Oliveira's office.

COMMENT 3: Spanish Translation

Marlene Chavez stated that the TCEQ should have offered Spanish translation services at the public meeting and that the public notice did not mention how to request translation services. Ms. Chavez stated that the TCEQ is aware that the surrounding communities are largely composed of low-income families whose primary language is Spanish. VPBCC and SFRGV stated that the TCEQ failed to consider the environmental justice implications of not providing Spanish translation services and thereby limiting the ability of Spanish speakers to participate in the permitting process. (Marlene Chavez, Dina Nunez)

RESPONSE 3:

The TCEQ facilitates public meetings on pending applications in communities across the state and does not have the resources to provide translation services at every public meeting. However, if the need for translation services is made known in advance of the meeting, the TCEQ may direct an applicant to arrange for a translator to attend a public meeting. The TCEQ provided a Spanish translator for a public meeting for a similar facility that was also recently held in Brownsville; none of the meeting attendees utilized the services of the translator who was made available. Given that the translation services were not used for the previous meeting and that no comments were submitted on this application in Spanish, the TCEQ did not arrange for a translator to be present at the public meeting.

Additionally, both of the public notices published in English included the statement "Si desea información en Español, puede llamar al 1-800-687-4040," which provides Spanish speakers with a telephone number to call for more information about the application. In addition, in accordance with 30 TAC § 38.405(h)(8), the Applicant was required to publish both notices in Spanish. Specifically, the first public notice for this application was published in Spanish, on June 22, 2016, and the second public notice was published in Spanish, on February 22, 2018, both in *El Nuevo Herald*.

COMMENT 4: Public Notice

Maria Galasso expressed concern that the first public notice listed emissions as "organic compounds" and stated it should have been "volatile organic compounds." Ms. Galasso stated that while TCEQ did not want to alarm the public, deciding not to notify the public about specific emissions that can be carcinogenic, and for which there is no safe level, is not in the public's best interest.

RESPONSE 4:

The Executive Director instructs applicants to provide public notice in accordance with statutory requirements and commission rules. The public notice informs the public of the opportunity to make comments and request a public meeting or contested case hearing. The TCEQ rules provide that the notice must include, at a minimum, a listing of criteria pollutants regulated under National Ambient Air Quality Standards (NAAQS)

for which authorization is sought, or under state standards in 30 TAC Chapters 111-113, 115, and 117. See 30 TAC § 39.411(e)(11). The use of the term “organic compounds” is broader and more encompassing than the term “volatile organic compounds.” The use of “organic compounds” permitted a more inclusive and more complete description of potential pollutants and therefore, the Executive Director determined the use of the term organic compounds complied with the applicable public notice rules. See Response 6 for a discussion of the health effects review performed on the emissions proposed to be authorized.

The required newspaper notice also invites citizens to request mailed notice on matters of interest by submitting their contact information to the Office of the Chief Clerk. The Chief Clerk’s Office is required to mail notice to persons on mailing lists maintained by the Office of the Chief Clerk. The TCEQ adopted rules for these public notice requirements in 30 TAC § 39.603, Public Notice of Air Quality Applications, Newspaper Notice.

COMMENT 5: Public Participation

Maria Galasso asked that the TCEQ consider comments submitted for this application in conjunction with comments submitted for two other LNG facility permit applications, specifically, Texas LNG and Annova LNG, as all three facilities will begin operations around the same time. Maria Galasso asked that TCEQ alter the normal administrative process to accommodate the uniqueness of this situation by combining the comments on all three facilities and delaying permitting until cumulative emissions modeling could be completed.

RESPONSE 5:

There is no mechanism in TCEQ rules for combining public comments or notice periods for permits from different applicants. Each application must comply with the TCEQ public notice rules applicable to the particular facility. In accordance with 30 TAC § 55.156, before an application is approved, the Executive Director prepares a response to all timely, relevant and material, or significant comments received for each application. However, there is a mechanism for considering all potential emissions from facilities in one area. As described below, air dispersion modeling was performed to evaluate potential impacts to human health and welfare or the environment from the project. Off-property sources are included in the modeling analysis when appropriate. See Response 6 for more information about the Air Quality Analysis performed for this project.

COMMENT 6: Air Quality/Health Effects

Commenters expressed concern about the amount and type of air emissions proposed to be authorized, stating that the proposed facility will be the largest source of emissions in the area. Commenters are specifically concerned that the emissions will affect air quality and adversely impact the local community. Several commenters stated that air quality in the area needs to be protected and preserved. In addition,

commenters are concerned that emissions proposed to be authorized are higher than other industrial sources in the Rio Grande Valley.

Commenters stated that EPA has characterized many of the contaminants proposed to be authorized as hazardous carcinogens. Sandra Leal stated the TCEQ has previously lied about air quality testing and asked how the TCEQ can guarantee that these emissions will not violate the community's right to clean air, health, and good quality of life. Isidro Leal stated that the TCEQ omits facts about air emissions. Marianne Poythress and Joyce Marie Hamilton expressed concern that the permit would allow the Applicant to release dangerous gases and contaminants into the environment.

Save RGV from LNG expressed concern that proposed emissions of NO_x, CO, VOCs, PM₁₀, and PM_{2.5}, and greenhouse gasses (GHGs) all exceed the PSD threshold. Save RGV from LNG stated that the TCEQ needs to further assess and document the public health and environmental impacts that will result from the proposed facility's emissions. In addition, Save RGV from LNG stated that the proposed emissions will adversely affect human health, welfare, animal life, vegetation, and property, and otherwise interfere with the normal use and enjoyment of animal life, vegetation, and property in violation of 30 TAC § 101.4.

(The City of Port Isabel, The Town of Laguna Vista, VPBCC and SFRGV, FJS Risk Scientists, Group A, Group B, Sharron Almaguer, Rogelio Banda, Joe Barber, William Berg, Rolando Borrayo, Rosemary Breedlove, Nytaah Bunrell, Calvin R. Byrd, Bryan Cantu, Jim Chapman, Gloria J. Collazo, Josette Cruz, Mary Helen Flores, Pearl Fry, Maria Galasso, Steven Garcia, Tony Garcia, Raul Garza, Gloria Gonzalez, Leticia Guerra, Joyce Marie Hamilton, Joyce Hamilton, Cynthia Hammond, Barbara Hill, Rebecca Hinojosa, Mary Elizabeth Hollmann, Johvonne Howard, Timothy Jarvis, Lela Burnell Korab, Alma Leal, Sandra Leal, Ava Leal, Isidro Leal, Danielle Lopez, Lance Lozano, Naila Mancias, Juan Mancias, Sonia Martin, Doug McKee, Melinda Melo, Jesse Miller, Kimberly Moreno, Cereza Moxa, Dina Nunez, Sheila Patel, Marta Elena Pena, Juan Perez, Marianne Poythress, Robert Radnik, Louise Reavis, Shahn Reber, Carlo Robledo, Jesus Rodriguez, Cereza Roxa, Jerry Ruiz, Teresa Saldivar, Victoria A. Scharen, Mary Ann Marie Severson, Robert Gordon Severson, Kathleen Sheldon, Nadine Smith, Laurel Steinberg, Dianne Teter, Rick Teter, Richard Tillotson, Vivana Trevino, Gregory Vail, Mirce Vargas, Daniel Velez, Armani Villarreal, Joanna Ward, Zoha Wazir, Brad Willis, John Henry Young)

Health Effects

Commenters expressed concern about the potential for short- and long-term health effects. Specifically, commenters are concerned that the proposed facility will affect the health of themselves and people living in nearby communities, including potential health impacts such as: increased risk for respiratory illnesses, including asthma, bronchitis, and COPD; cardiovascular issues, including heart disease; neurological issues; cancer; pregnancy complications, including miscarriages, still births, premature births, underweight births, birth defects, and premature deaths before age one; headaches; dizziness; nausea; death; and other chronic debilitating medical conditions.

FJS Risk Scientists stated that the potential health impacts cannot be determined because of the lack of data presented in the permit and expressed concern that there was not a thorough list of all contaminants proposed to be emitted from the facility and supporting operations. FJS Risk Scientists stated that the permit should be withdrawn until the public health impacts are scientifically-quantified in a manner verifiable by third-party review. Save RGV from LNG asked that the TCEQ deny the permit as insufficiently protective of human health.

Rita Wells Clarke stated that the TCEQ has no regard for the damage to southern Texas' citizen's health. John Henry Young expressed particular concern about PM emissions and asked that the Applicant be required to fund an independent evaluation of the public health impact costs of its proposed project.

Commenters also stated that a large portion of the communities in the area are low-income and cannot afford health issues or associated healthcare costs. Some commenters expressed concern about the potential for healthcare costs to rise. Diane and Rick Teter stated Cameron County has the highest rate of uninsured residents in the country at approximately 38%. Joshua DeCamp stated the value of the residents' health outweighs any perceived benefit of this project.

(VPBCC and SFRGV, FJS Risk Scientists, The Town of Laguna Vista, The City of Port Isabel, Group B, Aaron, Sharron Almaguer, Rogelio Banda, Joe Barber, William Beaty, William Berg, Bryan Cantu, Jim Chapman, Josette Cruz, Laura Dominguez, Suzanne El-Haj, Pearl Fry, Steven Garcia, Gloria Gonzalez, Joyce Marie Hamilton, Joyce Hamilton, Barbara Hill, Mary Elizabeth Hollmann, Timothy Jarvis, Sandra Leal, Danielle Lopez, Lance Lozano, Naila Mancias, Sonia Martin, Doug McKee, Melinda Melo, Kimberly Moreno, Cereza Moxa, Dina Nunez, Sheila Patel, Marta Elena Pena, Marianne Poythress, Louise Reavis, Shahn Reber, Jesus Rodriguez, Cereza Roxa, Mary Ann Marie Severson, Robert Gordon Severson, Nadine Smith, Dianne Teter, Rick Teter, Vivana Trevino, Mirce Vargas, Armani Villarreal, Joanna Ward, Zoha Wazir, Brad Willis, John Henry Young)

Sensitive Subgroups

Commenters expressed particular concern about health effects on sensitive subgroups such as children, the elderly, and pregnant women and fetuses. In addition, several commenters expressed concern about health effects on themselves and other persons with preexisting respiratory and cardiovascular conditions. Bryan Cantu and Armani Villarreal stated that the Hispanic community is affected by high asthma levels and that those levels would rise after the proposed facility is constructed. Joanna Ward stated the community does not have the necessary healthcare facilities to care for the children that will be made ill. Marianne Poythress and Joyce Marie Hamilton expressed concern for students attending nearby elementary, middle, and high schools.

John Henry Young stated he has a number of health problems. Josett Cruz stated she has two young daughters, one of which is special needs, and that she should not have to worry about her children developing asthma or other respiratory illnesses due to the emissions from the proposed facility. Sharon Almaguer stated she is concerned

because her mother is elderly and has respiratory problems. Marta Elena Pena stated she was planning to purchase property in the area, but no longer intends to because her mother, sister, and other family members are cancer survivors or are currently fighting cancer. Cathleen Dalton stated she has a rare terminal cancer. Deborah Culp-Hook stated that she currently has cancer in addition to the beginnings of reduced lung capacity and the potential impact of emissions cause her anxiety.

(The Town of Laguna Vista, The City of Port Isabel, Sharron Almaguer, William Beaty, Jim Chapman, Gloria J. Collazo, Josette Cruz, Laura Dominguez, Suzanne El-Haj, Mary Helen Flores, Steven Garcia, Joyce Hamilton, Barbara Hill, Mary Elizabeth Hollmann, Timothy Jarvis, Lance Lozano, Sonia Martin, Sheila Patel, Marta Elena Pena, Marianne Poythress, Jesus Rodriguez, Mary Ann Marie Severson, Robert Gordon Severson, Nadine Smith, Armani Villarreal, Joanna Ward, Zoha Wazir, John Henry Young)

Flora and Fauna / Habitat Loss

Commenters expressed concern that the proposed facility would irrevocably impact habitats and ecosystems in the area, which are home to many plant and animal species. Commenters expressed specific concern about impacts to the Rio Grande Valley, South Padre Island Beach, the Laguna Madre, and coastal wetlands in general. Commenters also inquired about the impact the proposed facility would have on specific natural areas, such as parks and reserves, including: Boca Chica State Park, the South Padre Island Birding Center, South Bay Coastal Preserve, the Lower Rio Grande Valley National Wildlife Refuge, the Laguna Atascosa Wildlife Refuge (LAWR), and the Bahia Grande Unit of the LAWR. Priscilla Almendariz and Alyria Victoria Gonzales stated that the wetland ecosystem protects South Padre Island and Port Isabel from flooding and other dangers from coastal storms and hurricanes. Leticia Guerra is concerned about mangrove habitat and wetlands. Diane Teter and Rick Teter stated they are concerned about the potential impact to seagrasses, which act as marine nurseries. Laurice Dee expressed concern about dolphins and the marine environment.

Several commenters expressed concern about the impact the proposed facility would have on the nesting sites of the Kemp's Ridley Sea Turtle. Gordon Watt stated the area has one of the only nesting sites of the Kemp's Ridley Sea Turtle in the United States. In addition, some commenters are concerned about the impact the proposed facility would have on fishing and shrimping. Shahn Reber expressed concern about impacts to the soil where he plants crops. VPBCC and SFRGV stated that the ecosystem, soil, and vegetation impacts to the shrimping and fishing industry have not been considered. Gregory Vail asked if there had been evaluations on migratory birds, neotropical birds, or local shore birds to determine how the birds may be affected.

(VPBCC and SFRGV, The Town of Laguna Vista, Group A, Group B, Aaron, Rogelio Banda, William Beaty, William Berg, Rosemary Breedlove, Nytah Bunrell, Calvin R. Byrd, Bryan Cantu, Gloria J. Collazo, Josette Cruz, Laura Dominguez, Mary Helen Flores, Pearl Fry, Raul Garza, Leticia Guerra, Joyce Marie Hamilton, Joyce Hamilton, Cynthia Hammond, Johvonne Howard, Marjorie Jacobs, Lisa Kunin, Naila Mancias, Sonia Martin, Dina Nunez, Juan Perez, Marianne Poythress, Robert Radnik, Louise Reavis, Shahn

Reber, Carlo Robledo, Cereza Roxa, Mary Ann Marie Severson, Robert Gordon Severson, Nadine Smith, Laurel Steinberg, Dianne Teter, Rick Teter, Vivana Trevino, Gregory Vail, Armani Villarreal, Joanna Ward)

RESPONSE 6:

The Executive Director reviewed the permit application in accordance with the applicable law, policy, procedures, and the Agency's mission to protect the state's human and natural resources consistent with sustainable economic development. However, the Executive Director does not have a mechanism to require that an outside party independently review and verify the Executive Director's review of the application. For this type of air permit application, potential impacts to human health and welfare or the environment are determined by comparing air dispersion modeling predicted concentrations from the plant to appropriate state and federal standards and TCEQ Effects Screening Levels (ESLs). The specific health-based standards or guidance levels employed in evaluating the potential emissions include the National Ambient Air Quality Standards (NAAQS), TCEQ standards contained in 30 Texas Administrative Code (TAC), and TCEQ ESLs. As described more particularly below, the Executive Director determined that the emissions authorized by this permit are protective of both human health and welfare and the environment.

The U.S. Environmental Protection Agency (EPA) created and periodically reviews the NAAQS. The NAAQS, as defined in 40 Code of Federal Regulations (CFR) § 50.2, include both primary and secondary standards. Primary standards are those the EPA Administrator determines are necessary, within an adequate margin of safety, to protect public health, including sensitive members of the population such as children, the elderly, and those individuals with preexisting health conditions. Secondary NAAQS are those the Administrator determines are necessary to protect public welfare and the environment, including animals such as birds and livestock, crops, vegetation, visibility, and buildings, from any known or anticipated adverse effects associated with the presence of a contaminant in the ambient air.

The EPA has set NAAQS for: carbon monoxide (CO), lead (Pb), nitrogen dioxide (NO₂), ozone (O₃), sulfur dioxide (SO₂), particulate matter less than or equal to 10 microns in aerodynamic diameter (PM₁₀), and PM less than or equal to 2.5 microns in aerodynamic diameter (PM_{2.5}), which are known as criteria pollutants. Of the criteria pollutants, this facility is expected to emit PM, PM₁₀, PM_{2.5}, CO, NO_x (defined as the sum of NO and NO₂, collectively expressed as NO_x), SO₂, and VOCs (which are a precursor to O₃). The facility will also emit sulfuric acid (H₂SO₄), hydrogen sulfide (H₂S), and hazardous air pollutants (HAPs). The facility also will emit GHGs, which are a federal new source review (NSR) regulated pollutant. Startup and shutdown emissions for sources are included within the units' estimated emissions as specified in the permit's Maximum Allowable Emission Rates Table (MAERT). Separate maintenance emissions activities are identified and quantified in the MAERT.

ESLs are constituent-specific guideline concentrations used in TCEQ's effects evaluation of constituent concentrations in air. These guidelines are derived by the

TCEQ's Toxicology Division and are based on a constituent's potential to cause adverse health effects, odor nuisances, and effects on vegetation. Health-based screening levels are set at levels lower than levels reported to produce adverse health effects, and as such are set to protect the general public, including sensitive subgroups such as children, the elderly, or people with existing respiratory conditions. Adverse health or welfare effects are not expected to occur if the air concentration of a constituent is below its ESL. If an air concentration of a constituent is above the screening level, it is not necessarily indicative that an adverse effect will occur, but rather that further evaluation is warranted. Generally, maximum concentrations predicted to occur at a sensitive receptor which are at or below the ESL would not be expected to cause adverse effects.

The EPA has documented a listing of emission factors and emission calculation methodologies that can be used to calculate the estimated emissions from many sources, including sources proposed to be authorized in this permit. These emission factors and emission calculation methodologies are incorporated throughout industries in Texas and have been used to estimate the emissions for this proposed project. Alternatively, applicants may rely on manufacturer specifications and TCEQ guidance to calculate emissions. The TCEQ ensures the conservative nature of these calculations by evaluating each emission point at the maximum operating conditions on both an hourly and an annual basis. The resulting emission rates are used as one of the inputs to an EPA-approved air dispersion modeling program that determines the predicted emission concentration for each air contaminant at locations surrounding the facility.

Prevention of Significant Deterioration

The Federal Clean Air Act (FCAA) established the Prevention of Significant Deterioration (PSD) program to ensure that economic growth would occur in a manner consistent with the preservation of existing clean air resources. 42 U.S.C. § 7470(3). The PSD program is only applicable to a major emitting facility, which is a facility that is one of the 28 named sources and emits or has the potential to emit 100 tons per year (tpy) or more of any air pollutant or any other source with the potential to emit 250 tpy or more of any air pollutant. 42 U.S.C. § 7479(1).

The commenters are correct in stating that predicted emissions of NO_x, CO, VOCs, PM₁₀, PM_{2.5}, and GHGs are above the Significant Emission Rate (SER) PSD threshold, as indicated in Section V of the PDS, however, this does not indicate that the permit is not protective, as described below. When a project is proposed, and review is begun by TCEQ, one of the first steps is to check whether federal review is applicable. First, it is determined whether the proposed project constitutes a major source of federally regulated pollutants. For sources such as the proposed project, if any PSD regulated pollutant (NO_x, CO, SO₂, ozone as VOC, ozone as NO_x, PM, PM₁₀, PM_{2.5}, lead (Pb), reduced sulfur compounds, sulfuric acid (H₂SO₄), and fluoride) has the potential to emit 250 tons per year or more, the site is considered a major source for PSD. Once it is determined that the site is a major source for at least one pollutant, predicted

emission rates for all regulated pollutants are reviewed to determine whether that pollutant's emissions are subject to PSD review. Because the proposed emissions of NO_x, CO, VOCs, PM₁₀, PM_{2.5}, and GHGs are above the major source threshold, they are subject to PSD review. In accordance with 30 TAC § 116.164,¹ GHGs alone will not trigger a PSD review, but if a PSD review is triggered by other pollutants, the potential to emit GHGs are also reviewed to determine if they are subject to PSD review. The following table illustrates the annual project emissions for each pollutant and whether the pollutant triggered PSD review.

Table 1. Annual Project Emissions for Pollutants

Air Contaminant	Project Emissions (tpy)	PSD Significant Emission Rate (tpy)	PSD Review Triggered (Y/N)
NO _x	2,058.72	40	Y
CO	3,142.30	100	Y
VOC	608.99	40	Y
PM	381.87	25	Y
PM ₁₀	381.87	15	Y
PM _{2.5}	381.87	10	Y
SO ₂	30.09	40	N
H ₂ SO ₄	2.25	7	N
H ₂ S	<0.01	10	N
GHGs (CO ₂ e)	8,198,227	75,000	Y

CO₂e - carbon dioxide equivalents based on global warming potentials of CH₄ = 25, N₂O = 298, SF₆=22,800

If emissions are above the SER for a proposed project, a PSD review is performed to ensure that proposed emissions are protective of human health and the environment. Being above the SER does not mean that the permit is not protective, it simply means the PSD review must be performed. Because the State of Texas has a federally approved permitting program in its State Implementation Plan, TCEQ has the authority

¹ 30 TAC § 116.164 is currently undergoing the rulemaking process.

to review and issue PSD air quality permits. The PSD air quality permit review for criteria pollutants (PSDTX1498) and GHGs (GHGPSDTX158) was performed as part of the current review, which also includes the minor New Source Review (NSR) permit (NSR Permit No. 140792).

Air Dispersion Modeling

The likelihood of whether adverse health effects caused by emissions from the proposed facility could occur in members of the general public, including sensitive subgroups such as children, the elderly, or people with existing respiratory conditions, was determined by comparing the facility's predicted air dispersion computer modeling concentrations to the relevant state and federal standards and ESLs. The Air Quality Analysis (AQA), which contains a combination of the facility's predicted air dispersion computer modeling concentration and ambient air monitoring data were reviewed by the TCEQ Air Permits Division and determined to be appropriate. Additionally, prior to providing the AQA, the Applicant submitted a modeling protocol to both TCEQ and EPA Region 6 outlining the proposed modeling methodologies. TCEQ staff used modeling results, presented in the AQA, to verify that predicted ground level concentrations from the proposed facility are not likely to adversely impact off-property receptors. The overall evaluation process provides a conservative prediction that is protective of the public.

For this specific permit application, the Applicant used the AERMOD modeling system to provide a reasonable worst-case representation of potential impacts from the proposed emissions on the area surrounding the facility. The air dispersion analysis first compared the predicted maximum ground level concentrations (GLC_{max}) from the proposed emissions for NO_2 , CO, PM_{10} , $PM_{2.5}$, and SO_2 to their respective de minimis levels. Concentrations below the de minimis level are considered to be so low that they do not require further NAAQS analysis. Table 1 presents the results of the modeling for the GLC_{max} for the pollutants compared to the de minimis levels.

Table 2. Modeling Results for De Minimis Review

Pollutant	Averaging Time	GLCmax ($\mu\text{g}/\text{m}^3$)	De Minimis ($\mu\text{g}/\text{m}^3$)
NO ₂	1-hr	14	7.5
NO ₂	Annual	1.2	1
CO	1-hr	365	2000
CO	8-hr	229	500
PM ₁₀	24-hr	1	5
PM _{2.5}	24-hr	1	1.2
PM _{2.5}	Annual	0.26	0.3
SO ₂	1-hr	1.53	7.8
SO ₂	3-hr	1.05	25
SO ₂	24-hr	0.38	5
SO ₂	Annual	0.09	1

As seen in Table 2 above, since the predicted concentrations of NO₂ (1-hour and annual) were greater than the applicable de minimis level, a full NAAQS analysis was conducted for both the 1-hour and annual NO₂ and the results are presented below in Table 3. Based on the procedures in the TCEQ Air Quality Modeling Guidance – APDG 6232, for a full NAAQS analysis, the total concentration was determined by adding the GLC_{max} to the appropriate background concentration. The background concentration is defined as the air contaminant concentrations present in the ambient air that are not attributed to the source or site being evaluated. The total concentration was then compared to the NAAQS to ensure that the concentration is below the standard. In this case, the results show that both the one-hour and annual concentrations of NO₂ are below the standards.

Table 3. Total Concentrations for NSR NAAQS (Concentrations > De Minimis)

Pollutant	Averaging Time	GLCmax ($\mu\text{g}/\text{m}^3$)	Background ($\mu\text{g}/\text{m}^3$)	Total Conc. = [Background + GLCmax] ($\mu\text{g}/\text{m}^3$)	Standard ($\mu\text{g}/\text{m}^3$)
NO ₂	1-hr	22	35	57	188
NO ₂	Annual	1.3	3.8	5	100

Air dispersion modeling resulted in a predicted GLC_{max} for NO₂ on a one-hour averaging time to be 22 $\mu\text{g}/\text{m}^3$ and an annual average to be 1.3 $\mu\text{g}/\text{m}^3$. Added to the background concentrations of 35 $\mu\text{g}/\text{m}^3$ and 3.8 $\mu\text{g}/\text{m}^3$ respectively, the resulting total concentrations of 57 $\mu\text{g}/\text{m}^3$ and 5 $\mu\text{g}/\text{m}^3$ are below the one-hour NAAQS of 188 $\mu\text{g}/\text{m}^3$ and the annual NAAQS of 100 $\mu\text{g}/\text{m}^3$. Background concentrations for NO₂ were obtained from the EPA AIRS monitor 480391016 located at 109b Brazoria Hwy 332 West, Lake Jackson, Brazoria County. The use of this monitor is reasonable and acceptable based on the Applicant's review of county-wide population and emissions as well as a quantitative analysis of source emissions located within 10 km of the project site and the monitor location.

PSD Increment Analysis

The de minimis analysis modeling results indicate that one-hour and annual NO₂ exceed the respective de minimis concentrations. When the de minimis analysis modeling indicate that a NAAQS pollutant exceeds its respective de minimis concentration, a PSD increment analysis is necessary for those NAAQS pollutants for which EPA has established an increment. Because the EPA has not established an increment for 1-hour NO₂ concentrations, only a PSD increment analysis for the predicted annual NO₂ concentration was performed to demonstrate that the available increment is not exceeded. The PSD increment is the maximum allowable increase in concentration that is allowed to occur above a baseline concentration for a pollutant. The results of the NO₂ increment analysis demonstrate that emissions of NO₂ from the site will not cause or contribute to an exceedance of the NO₂ PSD increment.

Table 4. Results for PSD Increment Analysis

Pollutant	Averaging Time	GLCmax ($\mu\text{g}/\text{m}^3$)	Increment ($\mu\text{g}/\text{m}^3$)
NO ₂	Annual	1.3	25

Property Line Analysis

A State Property Line analysis was also conducted for SO₂ and H₂SO₄. The predicted concentrations from the proposed emissions were compared to the standards in 30 TAC Chapter 112 to ensure that the concentrations are below the standards, as demonstrated in Table 3 below. Because the results are below the applicable standards, there is no expectation of any adverse impacts from emissions of SO₂ or H₂SO₄.

Table 5. Site-wide Modeling Results for state Property Line

Pollutant	Averaging Time	GLCmax ($\mu\text{g}/\text{m}^3$)	Standard ($\mu\text{g}/\text{m}^3$)
SO ₂	1-hr	1.53	1021
H ₂ SO ₄	1-hr	0.1	50
H ₂ SO ₄	24-hr	0.03	15

Health Effects Analysis

To evaluate potential impacts of non-criteria pollutants, a health effects analysis of HAPs and other VOC species proposed to be authorized was also performed. This analysis is performed using the TCEQ guidance Air Permit Reviewer Reference Guide - APDG 5874 - Modeling and Effects Review Applicability (MERA) (July 2009) process, which provides for predicted toxicological effects to be reviewed by Air Permitting staff in certain cases. The MERA is a step-by-step process, evaluated on a chemical species by chemical species basis, in which the potential health effects are evaluated against the ESL for the particular chemical species. The initial steps are simple and conservative, and as the review progresses through the process, the steps require more detail and result in a more refined (less conservative) analysis. If a contaminant meets the criteria of a step, the review for that chemical species is complete, and is said to "fall out" of the MERA process at that step.

Appendix B of the MERA includes the "Toxicology Emissions Screening list," identifying facilities and air contaminants that have been previously reviewed for health effects and are not expected to cause adverse health effects. Therefore, they do not require further review through the MERA process. Constituents on this list, which may be

emitted from the proposed plant, include emissions from combustion units fueled only by pipeline-quality natural gas.

Emission sources from the thermal oxidizers, diesel generators, piping fugitives, condensate storage tank and pigging, and unignited emissions from the LNG tank and ship BOG vent were subject to the MERA review. The constituents reviewed were: acetaldehyde, acrolein, benzene, ethylbenzene, formaldehyde, hexane, heptane, iso-butane, n-butane, iso-pentane, n-pentane, naphthalene, n-nonane, n-octane, phenanthrene, toluene, and xylene. Several of these constituents fell out at step 4C of the review process, in which the increases are considered de minimis. At this step, increases in acetaldehyde, acrolein, formaldehyde, naphthalene, and phenanthrene are each less than 0.04 lb/hr and their corresponding ESL is between 2 and 500 $\mu\text{g}/\text{m}^3$; and are thus considered de minimis and those contaminants "fall out" of the review. Similarly, also at step 4C, increases in toluene are less than 0.4 lb/hr and its ESL is greater than 3500 $\mu\text{g}/\text{m}^3$, which is also considered de minimis and therefore "falls out". At step 5 of the MERA, the ground level concentration due to the emission increase determined using a screening method is compared to 10% of the respective ESL, and if it is below that, it is allowed to "fall out". Emissions of ethylbenzene, iso-pentane, n-pentane, n-nonane, n-octane, and xylene were found to meet this criteria and "fell out". The remaining constituents proceeded to step 8, where they were required to be modeled. Thus, emissions of benzene, hexane, heptane, iso-butane, and n-butane were modeled by the Applicant.

Table 6. Minor NSR Production Project-Related Modeling Results for Health Effects

Pollutant & CAS#	Averaging Time	GLCmax ($\mu\text{g}/\text{m}^3$)	10% ESL ($\mu\text{g}/\text{m}^3$)
Benzene 71-43-2	1-hr	0.8	17
Benzene 71-43-2	Annual	0.05	0.45
Hexane 92112-69-1	1-hr	447	620
Hexane 92112-69-1	Annual	9	20
Heptane 426260-76-6	1-hr	7975	1000
Iso-Butane 75-28-5	1-hr	4525	2300
N-Butane 106-97-8	1-hr	4022	6600

Table 7. Minor NSR MSS Project-Related Modeling Results for Health Effects

Pollutant & CAS#	Averaging Time	GLCmax ($\mu\text{g}/\text{m}^3$)	25% ESL ($\mu\text{g}/\text{m}^3$)
Hexane 92112-69-1	1-hr	119	1550
Hexane 92112-69-1	Annual	4	50
Heptane 426260-76-6	1-hr	2140	2500
Iso-Butane 75-28-5	1-hr	1213	5750
N-Butane 106-97-8	1-hr	1078	16500

Results of the modeling of benzene, hexane, heptane, iso-butane, and n-butane are shown in the tables above. Step 9A of the MERA allows constituents to “fall out” if refined modeling shows that the GLCmax is less than 10% of the ESL (for normal operations) and less than 25% of the ESL (for MSS operations). This was true for benzene, hexane, and n-butane, so they “fell out” at this step. Emissions of heptane and iso-butane on a one-hour averaging time did not fall out, therefore, site wide modeling was required for these constituents as part of Step 11 of the MERA.

Table 8. Minor NSR Site-wide Modeling Results for Health Effects

Pollutant & CAS#	Averaging Time	GLCmax ($\mu\text{g}/\text{m}^3$)	GLCmax Location	ESL ($\mu\text{g}/\text{m}^3$)
Heptane 426260-76-6	1-hr	7975	Property Line	10000
Iso-Butane 75-28-5	1-hr	5738	Property Line	23000

The results of this site wide modeling of heptane and iso-butane are shown in the above table. Site wide modeling showed the GLC_{max} to be less than the ESL, therefore, the health effects from heptane and iso-butane are determined to be acceptable. Thus, all pollutants satisfy the MERA criteria and are not expected to cause adverse health effects.

The TCAA does not give the TCEQ authority to regulate air emissions beyond the direct impacts (inhalation) that the air emissions have to human health or welfare. Therefore, the TCEQ does not set emission limits on the basis that emissions may have impacts (by themselves or in combination with other contaminants or pathways) after being deposited on land or water or incorporated into the food chain. There is no expectation of soil contamination from the proposed facility because no exceedance of the secondary NAAQS is expected. In addition, the secondary NAAQS² are those the Administrator determines are necessary to protect public welfare and the environment, including animals, crops, vegetation, visibility, and buildings, from any known or anticipated adverse effects associated with the presence of a contaminant in the ambient air. Because the emissions from this facility should not cause an exceedance of the secondary NAAQS, air emissions from the proposed facility are not expected to adversely impact land, livestock, wildlife, crops, or visibility, nor should emissions interfere with the use and enjoyment of surrounding land or water.

In summary, the air contaminants proposed to be authorized in this permit application were evaluated in accordance with applicable federal and state rules and regulations. It was determined that, based on the potential predicted concentrations reviewed by the Executive Director's staff, adverse short- or long-term health effects for the general public, including sensitive subgroups such as children, the elderly, or those individuals

² Section 302(h) of the Federal Clean Air Act (FCAA), 42 U.S.C. § 7602, defines effects on welfare to include effects on soils, water, crops, vegetation, manmade materials, animals, wildlife, weather, visibility and climate, damage to and deterioration of property, hazards to transportation, and impacts to personal comfort and well-being, whether caused by transformation, conversion, or combination with other air pollutants.

with preexisting health conditions, animal life, crops, and vegetation are not expected as a result of exposure to the proposed emissions.

COMMENT 7: Air Quality Permit

Commenters expressed concern with the fact that a permit would need to be acquired to emit air contaminants. Melinda Melo stated that requesting an air quality permit is a disgrace. Teresa Saldivar stated that it was ominous that the Applicant needed a permit to emit air contaminants.

(Melinda Melo, Teresa Saldivar)

RESPONSE 7:

The TCAA § 382.0518 provides that before work begins on the construction of a new facility or a modification of an existing facility that may emit air contaminants, the person planning the construction or modification must obtain a permit or permit amendment from the commission. Air contaminant is defined in the TCAA § 382.003(2), to include “particulate matter, radioactive material, dust fumes, gas, mist, smoke, vapor, or odor, including any combination of those items, produced by processes other than natural.” Because the proposed plant will emit air contaminants, it must obtain a permit before it begins construction.

COMMENT 8: Hazardous Air Pollutants (HAP) and Radionuclides

Doug McKee is concerned about HAP emissions and stated the EPA’s website lists 200 different compounds that are included in the term HAPs. Mr. McKee asked if the proposed facility will meet the standards for all HAPs and stated that the TCEQ doesn’t know the levels of those other 200 HAP pollutants. FJS Risk Scientists stated that the permit doesn’t discuss or evaluate potential radionuclide emissions from the facility.

(Doug McKee, FJS Risk Scientists)

RESPONSE 8:

A HAP is defined as any pollutant subject to a standard promulgated under Section 112 the Federal Clean Air Act (FCAA) (relating to HAPs). The EPA publishes a list of HAPs on its website that currently contains 187 HAPs.³ A number of hazardous air pollutants (HAPs) have been identified by the EPA, but not every HAP is generated by every chemical process nor will the proposed facility emit all types of HAPs. The specific HAP compounds expected to be emitted from the proposed facility are: acetaldehyde, acrolein, benzene, ethylbenzene, formaldehyde, hexane, naphthalene, toluene and xylene. As described in Response 6, the proposed HAP emissions were reviewed and determined to be protective of public health and the environment. No

³ Available at <https://www.epa.gov/haps/initial-list-hazardous-air-pollutants-modifications>.

radionuclides are proposed to be authorized or expected to be emitted from the proposed facility.

COMMENT 9: Endangered Species

Several commenters expressed concern about threatened or endangered wildlife, including ocelots, dolphins, the Texas Horned Lizard, Texas Tortoise, Hawksbill Sea Turtle, Kemp's Ridley Sea Turtle, Northern Aplomado Falcon, and the Piping Plover. Patrick Thomas Anderson stated TCEQ should consider the Federal Ocelot Recovery Plan.

(Group A, Rogelio Banda, Bryan Cantu, Leticia Guerra, Joyce Marie Hamilton, Marjorie Jacobs, Brooke Kosar, Juan Perez, Mary Ann Marie Severson, Robert Gordon Severson, Armani Villarreal, Joanna Ward)

RESPONSE 9:

Compliance with rules and regulations regarding endangered species is addressed at the state level by the Texas Parks and Wildlife Department and at the federal level by the United States Fish and Wildlife Service. It is incumbent upon an applicant to request and acquire any additional authorizations from other state or federal agencies that may be required under state or federal law.

If operated in accordance with the requirements of the permit, adverse impacts from the proposed facility are not expected. As described in Response 6, the secondary NAAQS are set to protect public welfare and the environment, including animals, and the proposed facility is expected to be in compliance with all NAAQS. The TCEQ's jurisdiction for air quality permitting does not authorize the commission to consider effects on animals outside of an evaluation of the secondary NAAQS. However, permit holders must also comply with 30 TAC § 101.4, which prohibits the discharge of contaminants which may be injurious to, or adversely affect, animal life. The rule states that "[n]o person shall discharge from any source" air contaminants which are or may "tend to be injurious to or adversely affect human health or welfare, animal life, vegetation, or property, or as to interfere with the normal use and enjoyment of animal life, vegetation, or property."

COMMENT 10: Cumulative Impacts

Commenters expressed concern about cumulative and additive effects of the proposed facility in combination with other industrial facilities in the area. Several commenters stated that the Texas coastline has enough industrial operations. In addition, commenters stated that the TCEQ should consider the emissions from the proposed facility together with other facilities in the area, including Texas LNG, Anova LNG, Space Exploration Technologies Corporation (Space X), Valley Crossing Pipeline, and other oil and gas industries already established on the Brownsville Ship Channel. John Young stated that companies should not be allowed to have criteria pollutants evaluated separately. The City of Port Isabel and The Town of Laguna Vista stated that

because the project is part of a complex development that includes other similar facilities that are functionally and economically dependent upon one another and may not exist were it not for the proposed project, the project should be analyzed in light of the cumulative impact of these developments.

Maria Galasso asked that the TCEQ delay permitting until a cumulative modeling of emissions can be completed using a baseline of actual area emissions. FJS Risk Scientists stated that emissions of SF₆ from the electrical switchyard should be considered as part of the facility's overall emissions if the switchyard is present to support the facility. In addition, FJS Risk Scientists stated that any emissions from upstream fuel pre-treatment should be included in the total health and environmental impacts from the facility.

(Save RGV from LNG, City of Port Isabel, The Town of Laguna Vista, Group B, Sharron Almaguer, Patrick Anderson, William Berg, Jim Chapman, Maria Galasso, Joyce Hamilton, Marjorie Jacobs, Jesse Miller, Cereza Moxa, Dianne Teter, Rick Teter, John Henry Young)

RESPONSE 10:

Emissions of sulfur hexafluoride (SF₆) are not listed as one of the GHG pollutants proposed to be authorized because there are no SF₆ emissions associated with this project. An electrical switchyard, which can be a source of SF₆, is located inside the property line of the proposed Terminal but is located on land owned by another company. The switchyard is therefore not part of the proposed project. However, emissions from Compressor Station 3 have been aggregated along with emissions from the proposed project because Compressor Station 3 is a support facility that is proposed to be owned by the same investor and would be adjacent and contiguous to the proposed site.

As discussed in Response 6, the Applicant conducted an Air Quality Analysis (AQA) as part of this application. The AQA is a report containing information that demonstrates whether operation of the proposed plant would cause or contribute to an exceedance of the NAAQS or adversely affect human health and welfare. As part of the AQA, the Applicant conducted air dispersion modeling. An air dispersion model is a mathematical simulation of how air pollutants disperse in the ambient atmosphere. The model predicts ambient air ground-level concentrations that are used to determine compliance with applicable standards.

For each criteria pollutant subject to a NAAQS review, a modeling significance analysis was conducted to determine if the contaminant was below its de minimis level or whether a full NAAQS analysis would be required. The de minimis value is defined as that value below which a significant change in air quality is not anticipated, due to the emissions generated by the source, and no further evaluation of that contaminant is required. The one-hour and annual concentrations of NO₂ were subject to a full NAAQS analysis. A full NAAQS analysis requires an evaluation of all on-property sources, off-property sources within the modeling domain, and representative monitored

background concentrations, which are added to the modeled concentration (both on-property and off-property sources) to account for sources not explicitly modeled. Emissions from Texas LNG, Annova LNG, and other off-property sources in the area were included in the applicable full NAAQS analysis. At the time of the modeling review, Space X did not have any authorized or pending air authorizations. Therefore, any emissions from Space X could not be included in the impacts evaluation. Emissions from the Valley Crossing Pipeline were accounted for through conservative modeling approaches (for example, modeling allowable emission rates for all off-property sources). In addition, representative monitored background concentrations with similar spatial distribution of nearby sources were utilized in the cumulative analysis, independent of time and space. Sources not explicitly modeled were accounted for in the impacts evaluation with the use of a representative monitor. As detailed in Response 35, the use of representative monitors was reasonable.

Based on a review of the AQA, the Executive Director concluded that the Applicant sufficiently addressed the cumulative and aggregate impacts associated with the project by including existing background concentrations from representative monitors in the AQA and, thus, demonstrating that the proposed emissions are not expected to cause or contribute to an exceedance of the NAAQS. The TCEQ cannot deny authorization of a facility if a permit application contains a demonstration that all applicable statutes, rules, and regulations will be met. If an application is subsequently submitted to the TCEQ, the air quality analysis for that project would need to include the emissions authorized by this project, as well as other off-property sources within the modeling domain if a full impacts analysis is required.

COMMENT 11: Area of Impact

Joe Barber stated that emissions from the proposed facility could affect the entire Rio Grande Valley, including Port Isabel, Padre Island, and Brownsville, and expressed concern that the TCEQ has not factored this into its review. Mr. Barber indicated that his concern was based on his review of a fact sheet passed out at the public meeting.

RESPONSE 11:

As discussed in Response 6, the Applicant conducted an Air Quality Analysis (AQA) as part of this application. The AQA is a report containing information that demonstrates whether operation of the proposed plant would cause or contribute to an exceedance of the NAAQS or adversely affect human health and welfare. As part of the AQA, the Applicant conducted air dispersion modeling. An air dispersion model is a mathematical simulation of how air pollutants disperse in the ambient atmosphere. The model predicts ambient air ground-level concentrations that are used to determine compliance with applicable standards.

The Applicant used the AERMOD air dispersion modeling system to evaluate emissions from the proposed facility. AERMOD's modeling domain estimates ground level concentrations out to 50 kilometers (km) (approximately 30 miles) from the proposed modeled sources. A receptor grid extending out 50 km from the proposed sources and

following established guidance to capture the maximum ground-level concentration was relied on for each applicable pollutant. Receptors are specific locations where the model calculates predicted concentrations. At distances beyond the model predicted maximum ground-level concentration, the model predicted concentrations for all remaining receptors decrease with distance. In summary, the use of the AERMOD air dispersion modeling system and the Applicant's receptor grid design is sufficient to capture the maximum model predicted impact of the proposed facility on the air shed including Port Isabel, Padre Island, and Brownsville. As explained further in Response 6, based on the Executive Director's review of the AQA conducted, adverse impacts to human health and welfare as a result of exposure to emissions from the proposed facility are not expected.

The Executive Director notes that the fact sheet referenced by the commenter was not produced by the TCEQ. Thus, the Executive Director is unable to verify its content or accuracy.

COMMENT 12: More Stringent Standards

Commenters stated that TCEQ should impose more stringent standards on this Applicant and in the Brownsville Ship Channel generally due to the encroachment of heavy industry. Commenters state that stricter standards are needed to protect public health. John Henry Young stated that although the National Ambient Air Quality Standard (NAAQS) for ozone is 70 parts per billion (ppb), no more than 60 ppb should be authorized to adequately protect health. John Henry Young stated that the EPA risk factors used to establish TCEQ rules and regulations are inadequate and that there are gaping loopholes within the rules. Louise Reavis stated that the TCEQ's technical specifications and standards need to be changed.

(Save RGV from LNG, Isidro Leal, Juan Mancias, Bryan Parras, Louise Reavis, Jerry Ruiz, Diane Teter, Rick Teter, John Henry Young)

RESPONSE 12:

The EPA is the regulatory agency charged with ensuring the NAAQS are set at levels that are protective of human health and welfare. As such, concerns about the protectiveness of the current NAAQS are beyond the jurisdiction of the TCEQ. The NAAQS and state standards for pollutant concentrations are the applicable (and strictest) requirements in state and federal law with which the Applicant is required to comply. Concentrations of pollutants which do not have a NAAQS are compared to TCEQ Effects Screening Levels (ESLs) as part of the air permitting process. ESLs are not limits but rather health-based screening guidelines, which are set at levels lower than levels reported to produce adverse health effects and as such are set to protect the general public, including sensitive subgroups such as children, the elderly, or people with existing respiratory conditions. If an air concentration of a constituent is above the screening level, it is not necessarily indicative that an adverse effect will occur, but rather that further evaluation is warranted. Short-term ESLs are based on data concerning acute health effects, the potential for odors to be a nuisance, and effects on

vegetation. Long-term ESLs are based on data concerning chronic health and vegetation effects. The populations used to develop toxicity factors for pollutants include the general human population and any potentially sensitive human subpopulations, animals, and vegetation. More information, including the toxicity and risk factors used to develop the ESLs is available on the TCEQ website at <https://www.tceq.texas.gov/toxicology/esl>.

As described throughout this Response, TCEQ staff reviewed the permit application in accordance with the applicable state and federal law, policy, and procedures, in accordance with the agency's mission to protect the state's public health and natural resources consistent with sustainable economic development. The TCEQ cannot impose requirements more stringent than those required for other similar LNG facilities, unless there is a documented unsatisfactory compliance history. The combination of controls and control measures as specified in the permit meet current Best Available Control Technology (BACT) requirements for facilities of this type. So long as the proposed facilities are operated in accordance with the requirements of the draft permit, adverse impacts to human health and welfare from the proposed facility are not expected.

COMMENT 13: Dust Created During Construction

The City of Port Isabel and The Town of Laguna Vista stated that dust generated from construction activities, as well as by the disruption of the tidal flow on the project site, has the potential to harm residents and damage public and private property. Diane Teter and Rick Teter expressed concern about dust emissions during the construction phase of the facility and how they may impact the health of the local population and the economy. Mr. and Ms. Teter further stated that the Corps of Engineers closed the entrance to the Bahia Grande during previous dredging activities because dust emissions blew continuously and affected the local community. Mr. and Ms. Teter stated there should be a better process of combining the Corps of Engineers and TCEQ's oversight for the safety and health of the local community.

(The City of Port Isabel, The Town of Laguna Vista, Diane Teter, Rick Teter)

RESPONSE 13:

The TCEQ's jurisdiction is established by the Legislature and is limited to the issues set forth in statute. Accordingly, the TCEQ is granted authority to evaluate emissions from facilities. A "facility" is defined in TCAA § 382.003(6) as "[a] discreet or identifiable structure, device, item equipment, or enclosure that constitutes or contains a stationary source, including appurtenances other than emission control equipment. A mine, quarry, well test, or road is not a facility." Construction equipment such as bulldozers and portable generators are considered mobile or non-road sources and their emissions are not regulated by the TCEQ. However, operators must comply with 30 TAC § 101.4, which prohibits a person from creating or maintaining a condition of nuisance. The rule states that "[n]o person shall discharge from any source" air contaminants which are or may "tend to be injurious to or adversely affect human

health or welfare, animal life, vegetation, or property, or as to interfere with the normal use and enjoyment of animal life, vegetation, or property." Air contaminant is defined in the TCAA § 382.003(2), to include "particulate matter, radioactive material, dust fumes, gas, mist, smoke, vapor, or odor." Additionally, 30 TAC § 101.5 states that "no person shall discharge from any source whatsoever such quantities of air contaminants, uncombined water, or other materials which cause or have a tendency to cause a traffic hazard or an interference with normal road use." If the proposed plant is operated in compliance with the terms of the permit, nuisance conditions are not expected. The TCEQ cannot deny authorization of a facility if a permit application contains a demonstration that all applicable statutes, rules, and regulations will be met. However, individuals are encouraged to report any concerns about nuisance issues or suspected noncompliance with the terms of any permit or other environmental regulation by contacting the TCEQ Harlingen Office at 956-430-6056 or by calling the 24-hour toll-free Environmental Complaints Hotline at 1-888-777-3186. The TCEQ reviews all complaints received. If the plant is found to be out of compliance with the terms and conditions of the permit, it may be subject to investigation and possible enforcement action.

Citizen-collected evidence may be used in such an action. *See*, 30 TAC § 70.4, Enforcement Action Using Information Provided by Private Individual, for details on gathering and reporting such evidence. Under the citizen-collected evidence program, individuals provide information on possible violations of environmental law, and the information can be used by the TCEQ to pursue enforcement. In this program, citizens can become involved and may eventually testify at a hearing or trial concerning the violation. For additional information, see the TCEQ publication, "Do You Want to Make an Environmental Complaint? Do You Have Information or Evidence?" This booklet is available in English and Spanish from the TCEQ Publications office at 512-239-0028 and may be downloaded from the agency website at www.tceq.texas.gov (under Publications, search for Publication Number 278).

COMMENT 14: Future Permitting Actions/Other Potential Facilities

Commenters expressed concern that the proposed facility will increase fracking in Texas. Jesse Miller expressed concern that issuing a permit to one company will make easier for other LNG companies to get the same type of permit. Several commenters stated that the Texas coastline has enough oil and gas industry in the area. Commenters also stated that the area has enough industry with Space X located near the proposed facility's location.

(Group A, Sharon Almaguer, Emily Alpert, Charles Anderson, Marc Bizer, Debbie Cupp, Eric Ehramjian, Robert Krone, Spencer L., Richard Lemieux, Sarah Bishop Merrill, Jesse Miller, Debra Tietz, Jesse Miller, Bryan Parras, Mary Ann Marie Severson, Robert Gordon Severson, John Henry Young)

RESPONSE 14:

This permit action is for the construction of a natural gas liquefaction facility and liquefied natural gas (LNG) terminal authorized under a PSD case-by-case permit. Therefore, comments regarding potential future operations in the area are included for completeness but are not within the scope of the review of this application. The TCEQ cannot prevent any applicant from applying for other air quality permits at this or any other site. However, each application is reviewed for compliance with applicable rules and regulations and any future applications would need to demonstrate that the proposed facility would utilize BACT and that emissions would not cause or contribute to a violation of the NAAQS or cause adverse health effects. See Response 21 for concerns regarding fracking.

COMMENT 15: Material Dispensation

Commenters expressed concern that the natural gas produced at the proposed facility would be exported to other countries. (William Berg, Angelika Braxton, Marianne Poythress)

RESPONSE 15:

This permit, if granted, will regulate the control and abatement of air emissions only. Therefore, the ultimate use or disposition of any natural gas processed at the proposed facility is outside the scope of the review of this application. These comments are included for completeness but are not within the purview of the review of this application.

COMMENT 16: Air Quality Already Poor

The City of Port Isabel and The Town of Laguna Vista expressed concern about not attaining air quality standards and stated that, under certain meteorological conditions, Cameron and Hidalgo Counties already fail to meet air quality standards. John Henry Young stated that given the inadequate TCEQ monitoring of air quality in the area, it cannot be designated as an attainment area but only as an attainment/unclassified area for all criteria pollutants. Mr. Young stated that the Executive Director's statement that the "attainment or unclassified area" designation means that the area is presumed to be an attainment area is a hypothetical, speculative conclusion based on unknowns. Diane Teter, Rick Teter, and Jim Chapman stated that the county already has high levels of particulate matter.

(The City of Port Isabel, The Town of Laguna Vista, Diane Teter, Rick Teter, John Henry Young)

RESPONSE 16:

Cameron County, where the facility is proposed to be located, and Hidalgo County are currently classified as being in attainment/unclassifiable for all NAAQS. An

unclassifiable area is any area that cannot be classified, based on available information, as meeting or not meeting the national primary or secondary ambient air quality standard for the pollutant. In areas such as Cameron County, which the EPA has designated as attainment/unclassifiable for all NAAQS, the NSR requirements under part C of title I of the FCAA apply, which is the major PSD NSR program. The regulations associated with the PSD program, which must be met in order for the permit to be issued, are established to prevent deterioration of the air quality at the proposed location and are found in 30 TAC § 116.160 and FCAA §§ 160-169b; 42 USC §§ 7470-7492. As described in Response 6, an impacts and PSD increment analysis were conducted for this project and demonstrated that the proposed facility will not cause or contribute to an exceedance of the NAAQS; therefore, the project is not expected to impact either county's attainment status.

COMMENT 17: Acid Rain

Commenters stated the proposed facility will cause acid rain and are concerned about potential degradation of local refuges and natural areas that serve as necessary habitats and ecosystems.

(VPBCC and SFRGV, Save RGV from LNG, Raul Garza, Dianne Teter)

RESPONSE 17:

Acid Rain requirements are primarily addressed through the Federal Acid Rain Program. The requirement to obtain an Acid Rain Permit is independent of the requirement to obtain a New Source Review or Prevention of Significant Deterioration permit prior to construction and operation of facilities that may emit certain air contaminants. The Acid Rain Program is designed to protect the environment from the effects of acid rain. The overall structure of the Acid Rain Program is a cap and trade program designed to achieve significant environmental benefits through reductions in emissions of sulfur dioxide and nitrogen oxides (the two main precursors of acid rain). Specifically, the goal is to reduce emissions by 10 million tons below 1980 levels. The proposed project does not include any sources subject to the acid rain rules, as defined in 40 CFR Part 72. However, as discussed in Response 6, if the facility is operated in accordance with the permit, adverse impacts to human health and welfare are not expected.

COMMENT 18: Climate Change

Commenters expressed concern about climate change. Commenters stated that the Applicant and the TCEQ should be more focused on exploring and instituting alternatives to using fossil fuels and researching and investing in clean and renewable energy. Commenters expressed specific concern that the proposed facility will increase the local area's carbon footprint. Alice Burkhart stated the government should subsidize solar energy and not this proposed facility. Sarah Andersen stated the fossil fuel industry needs to learn how to create solar, wind, and wave power.

Patrick Thomas Anderson stated TCEQ should consider whether the proposed facility is a sustainable development, which coincides with its mission statement when compared with the resources used. Mr. Anderson also stated the commission should consider other state, national, and international initiatives and agreements including the Texas Emission Reduction Plan (TERP) and agreements made with Canada concerning methane emissions. John Henry Young stated that the TCEQ should consider the Council on Environmental Quality's August 2016 Greenhouse Gases and Climate Change guidance, the 2015 Paris Climate accord, and EPA Region 5's October 2016 letter to the Federal Regulatory Commission (FERC) calling on FERC to postpone a decision on another pipeline until the differences between the FERC and EPA on the GHG guidance are resolved.

(VPBCC and SFRGV, Group A, Aaron, Gary Ames, Sarah Andersen, Patrick Anderson, William Berg, Jeanne Choquenuanca, Mary Helen Flores, Mary Leon, Danielle Lopez, Lance Lozano, Naila Mancias, Kevin Misak, Sheila Patel, Robert Radnik, Cereza Roxa, Melissa Sanchez, Victoria A. Scharen, Mary Ann Marie Severson, Robert Gordon Severson, Dianne Teter, Jane Thompson, John Henry Young)

RESPONSE 18:

Policies involving international agreements fall under the jurisdiction of federal agencies. The TCEQ does not have jurisdiction to form or enforce international agreements. Additionally, under the jurisdiction established by the Texas Legislature, the TCEQ cannot prohibit a private company from using any product or fuel source as long as such usage does not result in a violation of environmental regulations or the NAAQS. Please see Response 6 for an evaluation of this project's impacts in relation to the NAAQS.

EPA has stated that unlike the criteria pollutants for which EPA has historically issued PSD permits, there is no National Ambient Air Quality Standard (NAAQS) for GHGs, including no PSD increment. The EPA Administrator has recognized that human-induced climate change has the potential to be far-reaching and multi-dimensional. *See* Endangerment and Cause or Contribute Findings for Greenhouse Gases Under Section 202(a) of the Clean Air Act, 75 Fed. Reg. 66496, 66497 (Dec. 15, 2009). Climate change modeling and evaluations of risks and impacts are typically conducted for changes in emissions that are orders of magnitude larger than the emissions from individual projects that might be analyzed in permit reviews. Quantifying the exact impacts attributable to a specific GHG source obtaining a permit in specific places and points would not be possible with current climate change modeling. EPA PSD and Title V Permitting Guidance for GHGs, March 2011 at 48. Thus, EPA has concluded it would not be meaningful to evaluate impacts of GHG emissions on a local community in the context of a single permit. As stated in the preamble to TCEQ's adoption of the GHG PSD program, the impacts review for individual air contaminants will continue to be addressed, as applicable, in the state's traditional minor and major NSR permits program per 30 TAC Chapter 116. 30 Tex. Reg. 2629, 2904 (April 11, 2014).

Air Quality Permit Review Process

COMMENT 19: Executive Director's Preliminary Determination

Commenters expressed concern about the TCEQ Executive Director issuing a preliminary determination that the application meets all applicable rules and regulations. FJS Risk Scientists stated that they find the preliminary determination suspect. Marjorie Jacobs stated because the application had received preliminary approval, it seemed that the Applicant and TCEQ were just going through the motions to move the process forward.

(Mary Helen Flores, Marjorie Jacobs, Alma Leal, Louise Reavis, Mirce Vargas)

RESPONSE 19:

The Texas Clean Air Act requires the Executive Director to conduct a technical review of and issue a preliminary determination on applications. TCAA § 382.056(f). The Executive Director's staff conducts both an administrative and technical review of all applications received by the agency. The first step of the application review process is an administrative review which verifies the following:

- The correct application was submitted;
- The application and any associated forms have been signed by the appropriate Responsible Official;
- The company is an entity legally entitled to do business in Texas;
- The information is accurately recorded in the TCEQ's Central Registry;
- The appropriate application fee was received;
- The mailing addresses for the company and site are USPS validated; and
- There are no delinquent fees owed by the company.

Additionally, the administrative reviewer completes the draft first public notice package. Once a project is declared administratively complete, the application and the first notice package (Notice of Receipt of Application and Intent to Obtain Air Permit) are made available for public review.

The air quality permit application then undergoes a technical review. During the technical review, the permit reviewer evaluates the following:

- All sources of regulated air contaminants at the proposed facility have been properly identified;

- Appropriate controls have been proposed for each emission source, including Best Available Control Technology (BACT) at a minimum;
- Emission calculations have been completed correctly using approved methodology and appropriate emission factors;
- Proposed emissions meet applicable state and federal requirements to be considered protective (in this case done through the use of air dispersion modeling, or an AQA);
- Compliance history for the site and the operator; and
- Public notice requirements are fulfilled.

If the Executive Director determines that the permit meets all applicable rules and regulations, the Executive Director then makes a preliminary decision recommending that the permit be issued. In other words, the Executive Director's preliminary decision indicates that the technical review is complete.

COMMENT 20: Representations in the Application

Commenters stated they believe that the permit application is incomplete, inconsistent, or misrepresents the type and amount of emissions at the proposed facility. VPBCC and SFRGV stated that the permit terms must include all assumptions made in the application and modeling reports. John Henry Young stated that LNG operations have not earned trust, and therefore, the Applicant's self-representations must be verified. (VPBCC and SFRGV, John Henry Young)

RESPONSE 20:

The Executive Director is unaware of any misrepresentations in the application. As described throughout this Response, Air Permits Division staff conducted a thorough review of this application to ensure it meets the requirements of all applicable state and federal standards. An applicant is bound by its representations in the application and those representations become an enforceable part of the permit, including production rates, authorized emission rates, and equipment. See 30 TAC § 116.116(a)(1). If the Applicant deviates from the representations made in the application, on which the permit was developed, the Applicant may be subject to enforcement action, as described in Response 70.

COMMENT 21: Hydraulic Fracking

Commenters expressed concern about hydraulic fracking in the oil and gas industry. Commenters are specifically concerned about the impacts of fracking on air quality, health, climate change and sustainability, earthquakes, water quality, and water availability. Commenters also expressed concern that if the proposed facility is

constructed, the export demand will increase fracking in Texas communities that are already suffering from earthquakes.

Rebecca Hinojosa stated that the fracking industry has already been linked to high levels of air pollution. Richard Gildi stated that people living near frack terminals experience many kinds of health issues. Sandra Denbraber stated that fracking made her chronically ill. Linda Flora stated that fracking could set off the volcano under Yellowstone National Park. Mary Wilcox stated fracking is unacceptable, especially in the environmentally sensitive areas of the Rio Grande Valley. Ronald Dula stated TCEQ should be opposed to fracking in all forms.

(Group A, Sandra Denbraber, Catherine Hazur, Rebecca Hinojosa, Ava Leal, Lance Lozano, Naila Mancias, Inge Moorman, Bryan Parras, Laurel Piersol, Joanna Ward, Gordon Watt)

RESPONSE 21:

This permit, if issued, will regulate the control and abatement of air emissions from the proposed facility only. No fracking activities are proposed to be authorized by this permit. Therefore, a review of any fracking activities is outside the scope of this review. These comments are included for completeness but are not within the purview of the review of this application.

COMMENT 22: Expedited Air Permitting Process

Save RGV from LNG stated that based upon the amount of air emissions proposed to be authorized, the application should not be expedited. Save RGV from LNG stated that there is no emergency reason or safety concern that justifies the expedited treatment. Save RGV from LNG expressed that this application should be processed in a non-expedited manner in order to allow for TCEQ and the public to properly and thoroughly review and consider the application.

RESPONSE 22:

Senate Bill 1756, 83rd Legislature, 2013, amended the TCAA to provide TCEQ with the authority to accept a surcharge from applicants to cover the expenses incurred by expediting the processing of an application. This surcharge may be used to fund the use of additional resources in the form of overtime or contract labor to process the application in an expedited manner. However, expedited applications undergo the same level of scrutiny and review as non-expedited applications and follow all air permitting process requirements. Guidance on the implementation of the Expedited Permitting Program is available on the TCEQ website at the following link:
https://www.tceq.texas.gov/permitting/air/nav/air_docs_newsource.html.

COMMENT 23: Type of Application

FJS Risk Scientists asked why the proposed facility does not require a Toxic Air Pollution (TAP) or Hazardous Air Pollution (HAP) permit and stated TCEQ has not proved that such a permit is not required.

RESPONSE 23:

The TCEQ issues many different types of air quality authorizations. The type of authorization needed depends on the particular sources and processes at a facility or plant. This application is for a natural gas liquefaction facility and liquefied natural gas (LNG) export terminal. The type of permit applicable to the proposed facility are case-by-case New Source Review (NSR), Prevention of Significant Deterioration (PSD), and a Greenhouse Gas (GHG) PSD permit.

The TCEQ does not issue "Toxic Air Pollution" permits. A HAP permit is an air authorization, but a review of the application did not show levels of HAP emissions that would trigger the need for a separate HAP permit (specifically 10 tons per year (tpy) of any one HAP or 25 tpy of any combination of HAPs). However, the Applicant is subject to the federal National Emission Standards for Hazardous Air Pollutants for Source Categories, 40 CFR Part 63, Subparts YYYY and ZZZZ, both of which establish national emission limitations and operating limitations for HAPs from stationary combustion turbines and stationary reciprocating internal combustion engines, respectively. Subparts YYY and ZZZZ include requirements to demonstrate initial and continuous compliance with emission and operating limitations. The draft permit contains conditions and maximum emission rate limits that meet these federal regulations, which are found in 40 CFR §§ 63.6080-63.6175 and 40 CFR §§ 63.6580-63.6675, respectively. See Response 6 for additional details on the pollutants proposed to be authorized and the health effects review conducted for this application.

COMMENT 24: GHG Permit

John Henry Young stated the application should be reviewed with consideration to the United States Council on Environmental Quality's new August 2016 Guidance on Greenhouse Gases and Climate Change, as well as the EPA's Region 5 October 2016 letter to the Federal Regulatory Commission (FERC) calling FERC to postpone publishing a record of its decision on the Leach Xpress Pipeline until the differences between the FERC and EPA position on the new GHG guidelines are resolved.

Mr. Young stated that the Executive Director's dismissal of GHG emissions in the preliminary determination summary is illogical, irresponsible, and dishonest. Mr. Young stated that the Executive Director does not want to require the proposed facility to do an air quality analysis or an additional impacts analysis, require the proposed facility to install the best available control technologies irrespective of cost, and does not want any additional public involvement in the permitting process. Mr. Young also stated that GHGs shouldn't be separated out and excluded for the evaluation if no other pollutants are above the permitted limit for each.

Diane Teter asked why the public could not comment on or request a contested case hearing for Permit No. GHGPSDTX158.

(Diane Teter, John Henry Young)

RESPONSE 24:

In November 2014, the EPA approved the State Implementation Plan (SIP) for Texas, in which the TCEQ is the SIP-approved authority for issuing air quality permits, including those for new source review, prevention of significant deterioration, and greenhouse gas prevention of significant deterioration. This was in response to rulemaking authorized by the 83rd Texas Legislature's passage into law of House Bill 788, in which Texas (via TCEQ) was given the authority to authorize greenhouse gases. Once EPA accepted Texas' State Implementation Plan, TCEQ is the authority to issue these permits in Texas. Note that TCEQ does not have authority or jurisdiction over permits required by FERC.

TCEQ did review GHG emissions from the proposed plant to ensure that:

- GHG emission calculations were performed using acceptable EPA developed emission factors;
- Sources expected to emit GHGs were listed on the MAERT and limited to approved emission rates;
- BACT for GHGs were applied to applicable sources; and
- Compliance with the approved emission rates for GHGs is shown (through proposed Special Condition Nos. 25-28).

EPA has stated that unlike the criteria pollutants for which EPA has historically issued PSD permits, there is no National Ambient Air Quality Standard (NAAQS) for GHGs, including no PSD increment. The EPA Administrator has recognized that human-induced climate change has the potential to be far-reaching and multi-dimensional. See Endangerment and Cause or Contribute Findings for Greenhouse Gases Under Section 202(a) of the Clean Air Act, 75 Fed. Reg. 66496, 66497 (Dec. 15, 2009). Climate change modeling and evaluations of risks and impacts are typically conducted for changes in emissions that are orders of magnitude larger than the emissions from individual projects that might be analyzed in permit reviews. Quantifying the exact impacts attributable to a specific GHG source obtaining a permit in specific places and points would not be possible with current climate change modeling. EPA PSD and Title V Permitting Guidance for GHGs, March 2011 at 48. Thus, EPA has concluded it would not be meaningful to evaluate impacts of GHG emissions on a local community in the context of a single permit. As a result, TCEQ has determined that an air quality analysis for GHG emissions would provide no meaningful data and has not required the Applicant to perform one.

As stated in the preamble to TCEQ's adoption of the GHG PSD program, the impacts review for individual air contaminants will continue to be addressed, as applicable, in the state's traditional minor and major NSR permits program per 30 TAC Chapter 116. 30 Tex. Reg. 2629, 2904 (April 11, 2014). Pursuant to the Texas Clean Air Act, Texas Health and Safety Code § 382.05102(d) permits for greenhouse gas emissions are not subject to the requirements related to a contested case hearing.

COMMENT 25: Third Party Verification

Commenters stated that each conclusion presented and reached in the draft permit should be verifiable by an independent third party. (FJS Risk Scientists, Timothy Jarvis, John Henry Young)

RESPONSE 25:

Air quality permitting in Texas is the responsibility of the TCEQ Air Permits Division. The information contained in the technical review and air quality analysis (AQA) is public and may be reviewed by any person interested in the application. As described in Response 6, both the TCAA and the TCEQ rules provide for an extensive review of the application to ensure that emissions from the proposed plant will meet applicable state and federal standards and will not be expected to adversely affect human health or the environment. However, the Executive Director does not have a mechanism to require that an outside party independently review the draft permit. See also Response 19 for a discussion of the permitting review process.

Emissions Calculations

COMMENT 26: Sources of Emissions Associated with the Project

Commenters are concerned that the permit application does not identify all sources of emissions for the proposed facility. Patrick Thomas Anderson stated that the Applicant's application to the Federal Energy Regulatory Commission (FERC) indicated that some sources of emissions were omitted from this application. FJS Risk Scientists stated that there is no independently verifiable method for the public to know if all the potential emission points and resulting emissions are identified and there may be emissions which are not permitted. FJS Risk Scientists stated that a thorough list of all the chemicals to be emitted from the facility should be identified in the draft permit and presented in the International Union of Pure and Applied Chemistry (IUPAC) nomenclature with each chemical's Chemical Abstracts Service (CAS) number and that the toxicity, carcinogenicity, environmental persistence, and teratogenicity of each emitted chemical should be determined via toxicological review by a professional environmental toxicologist. FJS Risk Scientists stated that if the TCEQ plans to issue a permit authorizing only a subset of emissions, the totality of emissions points and emissions must be presented so that the public is aware of what is being left out.

(VPBCC and SFRGV, Patrick Thomas Anderson, Patrick Anderson, Joyce Hamilton, FJS Risk Scientists, Vivana Trevino)

RESPONSE 26:

As described in Responses 6 and 19, the Executive Director reviewed the permit application in accordance with the applicable law, policy, procedures, and the Agency's mission to protect the state's human and natural resources consistent with sustainable economic development. The permit review addressed all sources of emissions as represented in the application in accordance with all applicable rules and regulations. The TCEQ routinely reviews numerous types of facilities, including LNG facilities and is therefore familiar with potential emission points for such facilities. The permit, if issued, will contain a list of all chemicals authorized to be emitted from the facility in the MAERT. As described in Response 38, as part of the evaluation of all applications, the permit reviewer audits all sources of emissions at the proposed facility as represented in the application. In addition, the Applicant is bound by its representations in the application and those representations become enforceable conditions upon which the permit is issued, including production rates, authorized emission rates, and equipment. *See 30 TAC § 116.116(a).* If the Applicant deviates from the representations in the application the Applicant may be subject to enforcement action.

COMMENT 27: Emissions Calculation Assumptions

Save RGV from LNG stated that the TCEQ should disclose and justify its assumptions for the proposed facility's emission source calculations. Save RGV from LNG stated that it is not clear from the emission calculations whether the assumptions made will result in the highest level of emissions at the facility. An example provided by Save RGV from LNG indicated the calculations for CO, NO_x, and VOC for the combustion turbines are based on data that is not easily discoverable in the materials appended to the application. Save RGV from LNG stated the information should be provided for public review and that if the TCEQ reviewed that data and the assumptions underlying it, that review should also be included in the application.

Save RGV from LNG stated the emission calculations in the application must represent the scenarios that will maximize CO and HAP emissions to ensure that no state or federal requirements are violated. The commenter stated that the TCEQ should qualitatively disclose the assumptions it is making for each source, the reason those assumptions were made, and the effects those assumptions have on the emissions, and that the TCEQ should analyze the emissions of the air contaminants at various load rates to determine the maximum emissions.

RESPONSE 27:

In general, emissions from the proposed facility were determined using manufacturer's data and the EPA's Compilation of Air Pollutant Emission Factors, the AP-42 Manual. The Applicant represented the appropriate methodologies to control and minimize emissions and utilized corresponding control efficiencies when calculating emission rates. As described above, the Applicant is bound by these representations, including the represented performance characteristics of the control equipment. In addition, the

Applicant must operate within the limits of the permit, including the emission limits as listed in the MAERT.

In the specific case of the combustion turbines, the Applicant submitted calculations, which included the basis of how those calculations were done. This basis was often found in the footnotes to the calculation tables. Emission factors for CO, NO_x, and VOC were based on manufacturer's data. SO₂ emissions were based on the sulfur concentration in the fuel. Emission rates for other pollutants were estimated based on the AP-42 Manual. This approach was typical for many of the other devices represented and was determined to be appropriate by the TCEQ.

The combustion turbine emission rates were based on a maximum firing rate, and these calculations were independently verified by the permit reviewer. While the TCEQ acknowledges that emission rates may vary based on the turbine loading, the proposed emission rates are conservatively calculated based on the maximum firing rate. Basing the MAERT on the maximum firing rate addresses any potential variations and ensures that the emissions are protective.

The Applicant provided the basis for its proposed calculations in Appendix E to the application. The TCAA and the TCEQ rules require applicants to make a copy of the application and a copy of the Executive Director's preliminary decision on the application available to review and copy at a public place in the county in which the facility is proposed to be located. TCAA § 382.056(d); 30 TAC § 39.405(g). The Applicant represented that the application was made available at the Brownsville Public Library Main Branch, 2600 Central Boulevard, Brownsville, Cameron County. In addition, the application was available at the TCEQ Central Office in Austin and the TCEQ Harlingen Regional Office, 1804 W. Jefferson Ave, Harlingen, Texas.

COMMENT 28: Ground Flares and Thermal Oxidizer Emissions Calculations

VPBCC and SFRGV stated that the Applicant assumed unrealistic emissions for the flares and thermal oxidizers and expressed concern that other facilities assumed higher emissions for similar sources. VPBCC and SFRGV stated that flares have the potential to emit PM, which has not been acknowledged in the application. The commenters state that using assumptions from other facilities results in at least 21.6 tpy of particulate emissions but the Applicant assumed that flares do not create any particulate emissions. Gregory Vail asked about the elevation of ground flares and what emissions will come from the ground flares.

(VPBCC and SFRGV, Gregory Vail)

RESPONSE 28:

The Applicant represented that the ground flares will be approximately 44 feet above ground. The pollutants expected to be emitted from the ground flares are: nitrogen oxide (NO_x), carbon monoxide (CO), sulfur dioxide (SO₂), volatile organic compounds

(VOC), particulate matter (PM), and carbon dioxide (CO₂). The maximum allowable emissions rates from the ground flares are listed in the MAERT.

Emission calculations for the flares were based on the TCEQ Air Permit Technical Guidance for Chemical Sources: Flares and Vapor Oxidizers - RG-109 for the determination of NO_x, CO, and VOC. SO₂ emissions for the flares was based on the represented sulfur content in the gases to be flared. In accordance with RG-109 (page 31), “[p]articulate emissions [from flares] should be negligible and should therefore not be estimated since smoking flares are excluded from permitting as defined in 30 TAC § 111.111.” The permit reviewer conducted an independent review of the emissions estimates from the flares and determined they were reasonable. Additionally, Special Condition 10(D) of the draft permit, stipulates that “[t]he ground flares shall be operated with no visible emissions except during periods not to exceed a total of five minutes during any two consecutive hours.” This condition will assure minimal particulate emissions.

With respect to emission calculations for the Thermal Oxidizers, emission factors for NO_x were based on manufacturer's data. SO₂ and H₂SO₄ emissions were estimated based on a material balance for H₂S in the incoming acid gas. Emission for CO, VOC and other pollutants were based on emission factors found in the AP-42 Manual. The maximum firing rate was used to determine the maximum emissions rate. All calculations were independently verified by the permit reviewer and determined to be acceptable.

The permit holder is bound by these representations and is required, by Special Condition Nos. 16, 17, 18, and 19, to perform stack tests to demonstrate initial compliance and to provide on-going monitoring and recordkeeping demonstrating continued compliance with the MAERT and with the conditions.

COMMENT 29: Fugitive Emissions

FJS Risk Scientists are concerned that the draft permit does not address fugitive emissions from the pipeline. VPBCC and SFRGV stated that Appendix E of the application fails to provide sufficient information to understand emissions calculations and assumptions. Specifically, in the Fugitive Emissions Source Calculations, the Applicant states “two methods will be used to give a conservative estimate of the Rio Grande fugitive emissions, the larger will be the selected result.” The commenters state that the two methods are an API method and emissions pro-rated from a very similar reference project and that emissions are greater from the pro-rated project, but the Applicant did not identify the specific project.

VPBCC and SFRGV also expressed concern that the Applicant underestimated fugitive emissions. Specifically, VPBCC and SFRGV stated that the Applicant estimated fugitive VOC emissions of only 0.17 tpy emitted from 22,140 gaskets, 9 pumps, and 9,606 valves. VPBCC and SFRGV stated these estimates are unrealistic because other, smaller LNG export terminals have estimated higher fugitive emissions points and fugitive VOC emissions at a substantially lower export capacity. VPBCC and SFRGV quoted

TCEQ Leak Detection and Repair (LDAR) guidance indicating that all fugitive components must be determined and reported, regardless of monitoring exemptions based on size, physical location, or low vapor pressure. VPBCC and SFRGV stated that the Applicant did not provide supporting evidence that it followed the TCEQ LDAR guidance.

In addition, VPBCC and SFRGV expressed concern that fugitive emissions have been underestimated by assuming all fugitive emissions originate as methane. VPBCC and SFRGV stated that fugitives can be a major source of H₂S and heavy hydrocarbons and ignoring sulfur compounds underestimates emissions, which commenters state is concerning because PSD review was not triggered for sulfur compounds.

(VPBCC and SFRGV, FJS Risk Scientists)

RESPONSE 29:

A separate project, the Rio Bravo Pipeline, will transport natural gas over a 137-mile route to the proposed facility. The TCEQ has no jurisdiction to authorize the pipeline; the pipeline authorization is under the jurisdiction of FERC. Therefore, no fugitive emissions from the pipeline were included in the review of this application. However, as described in Response 48, emissions from Compressor Station 3 associated with the pipeline have been aggregated into the review of this proposed facility.

The representations contained in Appendix E of the application for the fugitive emissions calculations referenced by the commenter were subsequently revised by the Applicant. The Applicant provided detailed fugitive emission calculations in a subsequent submittal updating the application. The update to the application was available for public review during the second public comment period. Specifically, the Applicant was required by 30 TAC § 39.405(g) to make the application, including any subsequent revisions to the application, available for review for the duration of the comment period. The Applicant represented that the application was made available at the Brownsville Public Library Main Branch, 2600 Central Boulevard, Brownsville, Cameron County. In addition, a copy of the application was also available at the TCEQ Harlingen Regional Office and at the TCEQ Central Office.

Fugitive emissions are not expected to be significant sources of H₂S or other sulfur compounds. Special Condition No. 8 will limit total sulfur in the fuel gas system to no more than 0.01 grains per 100 dry standard cubic feet on an hourly basis. Both sulfur compounds and any heavier hydrocarbons from the incoming pipeline gas would be removed early in the liquefaction process.

It was mistakenly asserted by a commenter that only 0.17 tpy of VOC were calculated as fugitive emissions. The Applicant's calculations actually represented 3.14 tpy of VOC, which are the emissions authorized on the MAERT. Concern was expressed that the fugitive emissions sources were undercounted. However, representations made by the Applicant in the application become conditions upon which the permit is issued. Furthermore, the Applicant will be required to follow Special Condition No. 15 which

prescribes a detailed 28HVP Leak and Detection Repair protocol. Failure to follow this protocol or demonstrate compliance with any representations in the application may result in enforcement action.

COMMENT 30: Sulfur Content of the Fuel Stream

VPBCC and SFRGV stated that the two fuel samples submitted to support the Applicant's sulfur emissions calculations are not enough to reliably determine the sulfur content of the fuel and the resulting emissions. VPBCC and SFRGV stated that the corresponding laboratory reports are excerpts and do not include the reporting limits or QA/QC supporting documentation. VPBCC and SFRGV stated the reports are insufficient to show that the proper sampling method was used, as American Society for Testing and Materials (ASTM) has not demonstrated the precision of Method D-6667 below 1 mg/kg (1 ppm). VPBCC and SFRGV stated that results below quantification limits are imprecise and their use can result in an underestimation of emissions.

VPBCC and SFRGV stated that in Table 3-1 of application, the Applicant made several assumptions about sulfur emissions, including the concentration of sulfur and factor of four. VPBCC and SFRGV expressed concern that no justification or explanation was provided for these assumptions.

RESPONSE 30:

The precision of the submitted natural gas analysis will have no bearing on future compliance. Special Condition No. 8 limits the sulfur content of the fuel gas to be fired to no more than 0.01 grains sulfur per 100 dry standard cubic feet. This special condition requires compliance with a very low sulfur concentration irrespective of the submitted information.

Initial compliance of the turbines with SO₂ emissions will be per 40 CFR § 60.4415, as required by Special Condition No. 17. 40 CFR § 60.4415 specifies EPA approved sulfur sampling methods. Federal gas sampling methods will include reporting limits, QA/QC discussion, and type and accuracy of sampling method used.

The Applicant provided the basis for its proposed calculations in Appendix E to the application. Appendix E explained that annual SO₂ emissions were based on a fuel analysis as provided in Appendix F of the submittal. The factor of four mentioned in the same footnote meant that the proposed SO₂ emission factor derived from the fuel analysis was multiplied by 4 to ensure the estimates of SO₂ emission rates were conservative. The proposed SO₂ emission rate was reviewed and verified by the permit reviewer. It was confirmed that the emission rate used by the Applicant was conservative and when used in the modeling analysis would provide a conservative analysis protective of public health.

COMMENT 31: Vessel Loading Emissions

VPBCC and SFRGV stated that the Applicant underestimated emissions from vessel loadings by using inconsistent and unsubstantiated assumptions when calculating emissions from warm vessels. VPBCC and SFRGV stated that despite admitting that not all vessels will arrive ready for LNG loading, but will arrive in a warm, inerted condition, which requires them to be prepared (de-inerted and cooled) before being loaded, the Applicant did not adequately discuss other methods for capturing these releases, such as routing directly to flares instead of venting. VPBCC and SFRGV stated that venting will release large quantities of CO₂, and N₂, and LNG to the atmosphere and expressed concern that the Applicant underestimated emissions from the flares. VPBCC and SFRGV stated the Applicant did not adequately discuss other methods for capturing these releases, such as routing directly to flares instead of venting, and that these emissions must be considered in the permit's impacts analysis to assure compliance and must be subject to BACT. VPBCC and SFRGV stated that because a warm carrier arriving in an inerted condition does not fall into the upset definition, these emissions must be included in PSD calculations and as part of the impact analysis to assure compliance with the NAAQS, PSD increments, and the protection of public health and welfare.

In addition, VPBCC and SFRGV expressed concern that the size and number of vessels that will need to be de-inerted was underestimated. VPBCC and SFRGV stated the facility is designed to accommodate vessels with a capacity up to 185,000 m³, but that the Applicant assumed that warm vessels will only hold 140,000 m³. VPBCC and SFRGV stated that there is no basis to assume that only smaller vessels will arrive in a warm state while also assuming a larger capacity elsewhere in its calculations. VPBCC and SFRGV stated that a larger vessel means more emissions and a longer duration of uncontrolled venting and flaring. In addition, VPBCC and SFRGV stated the Applicant assumed that only three warm vessels will arrive annually, which is less than 1% of ships that will arrive annually. VPBCC and SFRGV stated these calculations are inconsistent with much more conservative estimates used at other LNG facilities of smaller sizes.

RESPONSE 31:

The Applicant represented that most vessels will arrive ready for loading. This means the atmosphere of the tank contains methane. Under these typical conditions the gases that are displaced from the vessels during loading are directed to the Boil-Off Gas Compression system, which in turn supplies the fuel gas systems. The fuel gas systems supply the combustion turbines, the thermal oxidizers, the pilot flares, and flare purge.

The Applicant also represented that occasionally a vessel will arrive which is not ready for loading. These are referenced as "warm" and the vessel atmosphere is anticipated to be a mixture of nitrogen, carbon dioxide, and VOCs. When loading begins with such a warm vessel, the displaced gases cannot be introduced into the fuel gas system. Instead they are vented to the Boil-Off Gas Low- Pressure Vent (EPN VENT). After a

brief initial venting natural gas will be added and flaring will begin (EPN VENT-IG). The maximum allowable emission rate for this venting and flaring is quantified in the MAERT. The impact analysis for this application included emissions from this vent in its analysis.

The commenter has expressed concern that the number and/or size of arriving warm vessels has been underestimated. The MAERT controls the maximum emissions authorized to be emitted and the Applicant must be able to demonstrate compliance with the MAERT. If the Applicant is unable to demonstrate compliance, the Applicant may be subject to enforcement action.

COMMENT 32: MSS Emissions

Joe Barber inquired if blow-downs were included for when the proposed facility repairs the pipeline.

RESPONSE 32:

A separate project, the Rio Bravo Pipeline, would supply natural gas to the proposed facility. Three compressor stations are used to pressurize the natural gas through the pipeline. Air emissions from the compressor stations are authorized by the TCEQ as discussed in Response 48. The pipeline itself, however, is authorized by the Federal Energy Regulatory Commission (FERC) not the TCEQ. Although pigging⁴ emissions were included in the application for this proposed facility, blow-down emissions are not.

Air Dispersion Modeling

COMMENT 33: Gas Turbine Effects Analysis Review

Jim Chapman provided the following excerpt from the TCEQ Modeling and Effects Review for Air Permits (MERA):

“...combustion related emissions from engines, heaters, and other units fueled by pipeline quality natural gas are exempt from effects review. Also, combustion related emissions from flares, heaters, thermal oxidizers and other combustion related devices burning gases from onshore crude oil and natural gas processing plants are also exempt from effects review.”

Mr. Chapman states that this excerpt demonstrates a loophole in the guidance and asked how this is protecting air quality. Mr. Chapman expressed concern that 12 gas turbines were proposed to be authorized and stated that the amount of natural gas being refined of non-methane hydrocarbons and mercury will be 2.7 million metric tons per year. Mr. Chapman asks why these are exempt from effects analysis.

⁴ Pigging refers to the practice of using devices known as “pigs” to perform various maintenance operations on pipelines, which may result in a small amount of emissions.

RESPONSE 33:

For clarification, 27 million tons per year of natural gas will be processed; however, this is not the amount of emissions authorized to be emitted. All potential emissions authorized by the draft permit were reviewed as described in Response 6.

To evaluate potential impacts of non-criteria pollutants, a health effects analysis of HAPs and other VOC species proposed to be authorized was also performed. This analysis is performed using the TCEQ MERA⁵ process, which provides for predicted toxicological effects to be reviewed by Air Permitting staff in certain cases. The MERA is a step by step process, evaluated on a chemical species by chemical species basis, in which the potential health effects are evaluated against the ESL for the particular chemical species. In certain cases, the review of a particular chemical species may "fall out" of the MERA process and not require any further review. Note that this exclusion from the toxicology review does not mean that emissions from these combustion sources are not reviewed for acceptable air quality effects because these emissions must still meet the requirements of the NAAQS and State Property Line standards. See Response 6 for additional discussion of the MERA review process and the air quality analysis performed for this application.

COMMENT 34: Air Dispersion Modeling

Commenters expressed concern about the air quality analysis conducted in support of the application and stated that the TCEQ should require the Applicant to complete a thorough analysis. Commenters stated that the modeling analysis should include a cumulative air quality analysis to include other industrial sources in the area, specifically Texas LNG and Space Exploration Technologies Corporation (Space X).

Save RGV from LNG stated that without a cumulative air quality analysis, the modeling, including known nearby off-property emission sources, fails to accurately assess whether the facility will not cause or contribute to an exceedance of the NAAQS or applicable PSD increments. Save RGV from LNG stated that in its Off-Property Emissions Source Inventory, the proposed facility lists sources related to the Texas LNG project; however, the source was only included in the PSD NAAQS Analysis for NO₂ and does not appear to be considered as a source for the modeling of other air contaminants such as PM, CO, SO₂, and ozone. FJS Risk Scientists stated that each contaminant proposed to be emitted should be used as the "source term" for modeling exposure.

(Save RGV from LNG, FJS Risk Scientists, Patrick Anderson, Barbara Hill, Mary and Timothy Jarvis)

⁵ TCEQ guidance Air Permit Reviewer Reference Guide - APDG 5874 - Modeling and Effects Review Applicability (MERA) (July 2009)

RESPONSE 34:

As discussed in Response 6, the Applicant's air quality analysis demonstrated that the proposed emissions would be protective of human health and the environment. Additionally, see Response 10 for additional information on sources included in the air dispersion model.

COMMENT 35: Representative Monitors

Commenters objected to the Applicant's use of representative monitoring data in its air quality analysis. Maria Galasso stated that setting up a baseline without having monitors in the area doesn't make sense. VPBCC and SFRGV stated that the appropriateness of the surrogate monitoring is an issue that should be referred to hearing.

Save RGV from LNG stated that the background monitoring data is inaccurate and inapplicable to actual area impacts. Specifically, Save RGV from LNG is concerned that the background concentration did not include other off-property sources that will be permitted in the near future. Save RGV from LNG objected to the use of representative monitoring because of EPA's recent revision to the 8-hr ozone standard. Save RGV from LNG stated that the AQA indicated that the proposed facility would contribute an estimated 11.6 ppb of ozone emissions over an 8-hr period and expressed concern that after adding the background concentration, the total concentration is near the 70-ppb ozone NAAQS.

(VPBCC and SFRGV, Save RGV from LNG, Jim Chapman, Maria Galasso, Doug McKee, John Henry Young)

RESPONSE 35:

The approach of using representative monitoring data from the existing monitoring network is consistent with long standing guidance for PSD permit applications. Specifically, Appendix W to 40 CFR Part 51 § 8.3.2(b) provides that "... If there are no monitors located in the vicinity of the new or modifying source, a "regional site" may be used to determine background concentrations. A regional site is one that is located away from the area of interest but is impacted by similar or adequately representative sources."

The Applicant demonstrated that background concentrations relied on in the air quality analysis are reasonable to use because the monitor is sufficiently impacted by similar or adequately representative sources as the proposed site. The Executive Director reviewed the selected monitors and considering the magnitude, spatial distribution, and type of emissions relative to the proposed site determined that the use of the selected monitors is acceptable.

COMMENT 36: Ambient Air Monitoring

Commenters stated TCEQ should consider adding an ambient air monitor in the area to monitor emissions from the proposed facility. Commenters asked that ambient monitors be installed at the Port of Brownsville, Port Isabel, Laguna Heights, Laguna Vista, South Padre Island, the Lower Laguna Madre area, and around the high school in the area. VPBCC and SFRGV stated that additional monitoring stations in the Brownsville area should be required so that the predictions made in the Air Quality Analysis report can be verified. Marjorie Jacobs asked if air quality will be monitored daily. Save RGV from LNG stated that TCEQ should require the Applicant to install a new monitoring station at or near the site to provide more accurate data regarding air emissions and to meet its preconstruction monitoring requirement.

Joanna Ward stated that unlike other states, TCEQ is not monitoring air quality very well. Jim Chapman stated that if TCEQ chooses to ignore the public interest and issue permits, they must be contingent on establishing additional air quality monitors. Maria Galasso asked how TCEQ determines where ambient air monitors will be located and if a different kind of monitor is required for each contaminant.

(Group B, Save RGV from LNG, VPBCC and SFRGV, Patrick Anderson, Jim Chapman, Maria Galasso, Marjorie Jacobs, Sandra Leal, Doug McKee, Dianne Teter, Rick Teter, Joanna Ward, John Henry Young)

RESPONSE 36:

Due to cost and logistical constraints, the placement of air monitors is prioritized to provide data on regional air quality in areas frequented by the public. The existing air monitoring network is the result of a strategic balance of matching federal monitoring requirements with state and local needs. Consistent with federal air monitoring requirements, the TCEQ evaluates the placement of air quality monitors within the air monitoring network using trends in population, reported emissions inventory data, and existing air monitoring data for a given area. In addition, the TCEQ may prioritize monitor placement in areas with potential regional air quality issues, such as those related to increased oil and gas activity in the Barnett Shale and Eagle Ford Shale areas. The TCEQ annually evaluates the number and location of air monitors within its network to assess compliance with federal monitoring requirements and the adequacy of monitoring coverage for identified monitoring objectives as a part of the Annual Monitoring Network Plan provided to EPA on July 1 of each year. This plan is made available on the TCEQ's website for public review and comment for 30 days beginning in mid-May. Requests for additional monitoring or the identification of additional monitoring needs may be made during this public comment period and will be considered along with other monitoring priorities across the state. To receive email announcements related to the ambient air monitoring network, including the availability of the Annual Monitoring Network Plan for public review and comment, please visit the following link <https://service.govdelivery.com/accounts/TXTCEQ/subscriber/new> and select "Air Monitoring Network Announcements."

Since stationary air monitors are sited to measure air quality that is representative of a broader area or region, monitors are not typically placed to measure the impacts from specific industrial facilities. See Response 69 for a discussion of the monitoring requirements contained in the draft permit.

COMMENT 37: Additional Impacts Analysis

VPBCC and SFRGV stated the air quality impacts of commercial, residential, industrial and other growth associated with the source are not adequately considered as required by 40 CFR § 52.21(o), which is incorporated by reference into 30 TAC § 116.160(c)(2)(B). VPBCC and SFRGV stated the Applicant's attempt to comply with 40 CFR § 52.21(o)(2) cannot be considered an analysis, nor did TCEQ's analysis include greater consideration of air impacts associated with growth.

VPBCC and SFRGV also stated that additional impacts to the ecosystem, soil, vegetation, and impacts to the shrimping and fishing industry are not considered. VPBCC and SFRGV stated that the proposed facility will increase the number of ships transiting the port and cause ballast water to be introduced in the waters around Brownsville. Commenters expressed concern that the application does not address whether this ballast water will contain contaminants, either biological or chemical, that could impact the fish and shrimp populations, as well as the people who depend on that industry.

Save RGV from LNG stated that no visibility impairment analysis has been undertaken and requested that the TCEQ require the Applicant to undertake a visibility impairment analysis in the near field region and identify visibility sensitive receptors within the impact area such as state parks, airports, etc.

(Save RGV from LNG, VPBCC and SFRGV, Barbara Hill)

RESPONSE 37:

The purpose of the Additional Impacts Analysis is to show that additional impacts from a new major source or major modification of an existing source will not impair visibility, soils, and vegetation as a result of the emissions associated with the source or modification. Also, an analysis of the air quality impact projected for the area due to growth associated with the new major source or major modification of the existing source is required.

The growth analysis consists of estimating how much new growth (residential, industrial, commercial, and/or other growth) is likely to occur in the area (i.e. within the modeling domain) to support the major source or major modification under review, and then estimate the emissions which will result from that associated growth. The growth analysis shall also include an analysis of the air quality impact projected for the area as a result of general residential, industrial, commercial, and/or other growth associated with the major source or major modification under review. An in-depth growth analysis is only required if the project would result in a significant shift

in population and associated activity into the area (i.e., a population increase of more than a thousand people in the general area of the plant). As part of the air quality analysis, the Applicant conducted a growth analysis and concluded that a significant increase in growth, relative to the Brownsville area, is not expected in association with the proposed project. As a result, an in-depth growth analysis was not warranted. With no significant growth to the area related to the proposed project, air quality impacts are not anticipated.

The visibility analysis consists of evaluating visual impairment from the project emissions within the area (i.e., within the modeling domain). This analysis is distinct and separate from the Class I area visibility analysis. An applicant can meet the requirement for the Class II visibility impairment analysis by acknowledging compliance with the visibility and opacity requirements in 30 TAC Chapter 111. The Applicant acknowledged compliance with the visibility and opacity requirements of 30 TAC Chapter 111. Additionally, as discussed throughout this Response, the Executive Director determined that the application meets all applicable rules and regulations, including those in 30 TAC Chapter 111.

The soils and vegetation analysis consist of evaluating the impact of the project emissions on soils and vegetation within the area (i.e. within the modeling domain). For most types of soils and vegetation, ambient concentrations of criteria pollutants below the secondary NAAQS will not result in harmful effects. As described in Response 6 the proposed emissions from this facility are not expected to cause an exceedance of the NAAQS.

As discussed in Response 73, the TCEQ does not have jurisdiction over ships. See also, Response 71 for a discussion of water issues.

BACT

COMMENT 38: BACT and Cost Analysis

Commenters stated that the Applicant should be required to install the BACT to achieve maximum emissions reductions irrespective of cost. John Henry Young stated the companies should not be allowed to rule out pollution controls as too costly or as requiring re-engineering of the proposed operations, without consideration of the cost of emissions to public health and healthcare costs.

VPBCC and SFRGV expressed concern that the BACT review was too narrow, that the Applicant unevenly reviewed RBL entries added in the last decade, relied on an incomplete review of existing technologies, and over-estimated the cost of certain technologies. VPBCC and SFRGV stated that for the largest sources of emissions, the Applicant only reviewed entries from the RBL database and that EPA's NSR Manual describes additional sources of information that should be consulted in a comprehensive BACT/LAER review. VPBCC and SFRGV stated that a complete review should include similar international facilities. In addition, VPBCC and SFRGV stated that in Appendix G, the Applicant does not explain why it did not conduct a uniform

search of the RBLC database. VPBCC and SFRGV also stated that in Appendix H, the Applicant makes unsubstantiated assumptions on cost, including the interest rate and expected equipment life. In addition, VPBCC and SFRGV stated that the Applicant omitted RBLC entries without explanation, specifically, the Indeck Wharton Energy Center (TX-0694), permitted for simple cycle turbines in 2015, which is included in the TCEQ's Gas Turbine Permit List.

Save RGV from LNG stated that the TCEQ must critically review the Applicant's examined cost, energy, and environmental impact analysis and require more protective control technologies be employed, as required by federal law.

FJS Risk Scientists stated that "good combustion practices" are repeatedly listed as BACT, but that good combustion practices are not a control technology. FJS Risk Scientists stated that the specific equipment to be used, all settings, operational parameters, feedback loops, and checks required to ensure machinery is operational must be identified. FJS Risk Scientists stated that because these details are not specified, there is no BACT for NOx, CO, VOCs, PM, or GHGs. In addition, FJS Risk Scientists stated that TCEQ should require control technology to control emissions to below PSD thresholds and eliminate 99.9% of emissions.

(VPBCC and SFRGV, Save RGV from LNG, FJS Risk Scientists, Jim Chapman, Barbara Hill, John Henry Young)

RESPONSE 38:

The TCAA and TCEQ rules require an evaluation of air quality permit applications to determine whether adverse effects to public health, general welfare, or physical property are expected to result from a facility's proposed emissions. As part of the evaluation of applications for new or amended permits, the permit reviewer audits all sources of air contaminants at the proposed facility and assures that the facility will be using the best available control technology (BACT) applicable for the sources and types of contaminants emitted. The BACT is based upon control measures that are designed to minimize the level of emissions from specific sources at a facility. Applying BACT results in requiring technology that best controls air emissions with consideration given to the technical practicability and economic reasonableness of reducing or eliminating emissions. BACT may be numerical limitations, the use of an add-on control technology, design considerations, the implementation of work practices, or operational limitations. *See* TCAA § 382.0518; 30 TAC § 116.111. Therefore, BACT does not always require installation of control technology and may consist of firing clean burning fuels, such as natural gas for which emissions of criteria pollutants are minimized, which is an example of "good combustion practices."

For its BACT analysis, the Applicant utilized the EPA Top-Down Method. EPA developed the top-down process to ensure that a BACT analysis satisfies the applicable legal criteria. The TCEQ reviews BACT based on its Three-Tier review. However, both methods of review generally yield the same result and TCEQ allows applicants to choose which method of review to use.

The EPA top-down BACT analysis consists of a five-step process as listed below:

- Step 1: Identify all control options
- Step 2: Eliminate technically infeasible options
- Step 3: Rank remaining control options
- Step 4: Eliminate control options based on evaluation of collateral impacts
- Step 5: Select BACT

More information on the EPA Top-Down method for BACT analysis can be found in the TCEQ guidance Air Permit Reviewer Reference Guide - APDG 6110 - Air Pollution Control, Appendix E.⁶

As part of the BACT review process, the TCEQ evaluates information from the Environmental Protection Agency's (EPA's) RACT/BACT/LAER Clearinghouse (RBLC), on-going permitting in Texas and other states, and the TCEQ's continuing review of emissions control developments. The date range for all the RBLC searches was identified as spanning January 1, 2005 through July 6, 2015. This is a typical date range for this type of search because as control technology improves over time, looking back further than ten years would not yield better controls. A review of a few of the searches indicates 32 entries for NO_x control for Thermal Oxidizers, 54 entries for NO_x control for Simple Cycle Gas Turbines, and 48 entries for CO control for Simple Cycle Gas Turbines. The total RBLC review for all categories totaled 86 pages. The submitted search was determined to be adequate for aiding in an assessment of current technology trends for pollution control. A review of controls on international facilities is not necessary when there is such a breadth of facilities within Texas and the U.S. for which controls have already been permitted, applied, and put in use.

The TCEQ also evaluates cost in its BACT review. Cost estimates were based on the EPA Cost Control Manual, which is based upon purchased equipment cost and an expected equipment life of 20 years, which is typical for facilities of this type.

Appropriate pollution controls or emissions reductions were proposed in the application and were accepted by the Executive Director's staff for all facilities. The effects of emissions upon public health and welfare were reviewed as part of the air quality and health effects analyses, which were found acceptable and compliant with all federal and state standards as discussed in Response 6.

The Special Conditions contained in the draft permit will ensure that control equipment is operating properly and that emissions comply with the rates and

⁶ Available on the TCEQ website at https://www.tceq.texas.gov/assets/public/permitting/air/Guidance/NewSourceReview/airpoll_guidance.pdf

conditions as represented in the permit application. These conditions include limits on hours of operation, sulfur content of fuels, sufficient heating value in streams routed to the flare so that pollutants are destroyed, NO_x, CO, and VOC limits from the turbines, temperature minimum from the thermal oxidizer to ensure VOC destruction, time limits on startup and shutdown events, opacity limits, required tank characteristics, minimization of VOC fugitive emissions, and initial and continuing compliance demonstrations. All of these measures ensure that the Applicant will apply and adhere to all BACT requirements.

Control technologies for the planned equipment are proposed by the Applicant. As stated in the Air Permit Reviewer Reference Guide - APDG 6110 - Air Pollution Control at page 3, the agency does not dictate what specific controls are required to meet BACT. The TCEQ cannot require that other facilities be proposed, but rather must review the facilities as proposed. In addition, the proposed facility is subject to and, if operated in accordance with the permit, will meet EPA's National Emission Standards for Hazardous Air Pollutants (NESHAP) Maximum Control Technology requirements for the turbines and emergency engines (40 CFR 63 Subparts YYYY and ZZZZ).

COMMENT 39: Combustion Turbines

Commenters stated that the BACT analysis for combustion turbines is incomplete and inadequate and that the draft permit does not require BACT for the turbines.

Electric Compressors

VPBCC and SFRGV stated that the Applicant considered the use of electric-driven compressors and CO-generation, but improperly rejected both. VPBCC and SFRGV stated that existing LNG export terminals in Norway, Indonesia, Africa, and Saudi Arabia use electrical compression. VPBCC and SFRGV stated that electric drive is dismissed by the Applicant with unsupported statements and that the review is therefore inadequate. VPBCC and SFRGV stated that electric compression must be considered BACT and takes issue with the argument that the use of electric-drive compression would create as much emissions as the 12 Frame 7 turbines. In addition, VPBCC and SFRGV stated that the Applicant failed to consider power generation by combined cycle plants and that another facility, the Jordan Cove LNG Energy Project, has proposed a dedicated combined cycle plant with low resulting emissions rates. VPBCC and SFRGV stated that the choice of turbine means that more pollutants will be permitted and that the draft permit does not require BACT.

BACT for GHGs

VPBCC and SFRGV stated that the Applicant correctly identified turbine design as potential BACT for GHGs but did not adequately examine the actual GHG reduction of an aero-derivative turbine over a frame turbine and did not include turbine design as possible BACT for other non-GHG pollutants.

SCR/SNCR

VPBCC and SFRGV stated that BACT for NO_x control of the turbines is SCR. VPBCC and SFRGV stated that the Applicant wrongly concluded that SCR was economically infeasible and that the cost analysis is overestimated. VPBCC and SFRGV stated that the Applicant used a 1990's era generic cost estimate for SCR, at a time when SCR was just being introduced on a large scale, which inflates the NO_x cost-effectiveness of the technology. VPBCC and SFRGV expressed concern that the Applicant did not review current information on SCR costs and did not review information available from the South Coast Air Quality Management District (SCAQMD).

Save RGV from LNG stated that the Applicant identified environmental impacts, including ammonia slip and spent catalyst waste, but did not quantify this ammonia slip or adequately justify why these impacts exceed the environmental gain due to significant reduction of NO_x if SCR were implemented. Save RGV from LNG stated that the Applicant relied on a conservative estimate of the amount of NO_x that would be removed by SCR but did not adequately document the actual average NO_x levels achieved by similar facilities. Save RGV from LNG stated that EPA guidance states that if a control technique has been applied in only a few cases, the Applicant must identify those characteristics unique to those sources that may have made the application of the control appropriate in those cases but not for the source under consideration. Save RGV from LNG stated that because SCR is achievable, available, and is regularly implemented in other LNG projects, the Applicant's BACT analysis is flawed.

In addition, Save RGV from LNG stated that the Applicant did not adequately explain why SCR would increase costs relative to Dry Low NO_x combustion and did not consider the combination of SCR with either water or steam injection or combined with Dry Low NO_x combustion. Save RGV from LNG also expressed concern that the NO_x limit for the gas turbines is 9.0ppm, while the accepted BACT for turbines at other LNG facilities has ranged between 2 and 5ppm. John Henry Young stated that the costs of adequately dealing with SNCR-related ammonia emissions and catalyst replacement should be considered irrelevant and that if the Applicant can't afford SNCR, it should not move forward with the proposed project. Mr. Young stated that if SNCR is technically infeasible, the Applicant should redesign to assure adequate protection of public health.

Oxidation Catalyst

Commenters stated that the Applicant wrongly concluded that oxidation catalyst was economically infeasible. VPBCC and SFRGV stated the Applicant inflated the cost of oxidation catalyst equipment by approximately a factor of 10 to assert that it is not cost effective for CO and VOC removal. VPBCC and SFRGV stated the Applicant double counted the cost of installing oxidation catalyst. Save RGV from LNG stated that an oxidation catalyst was rejected on the grounds that there are energy impacts due to decreased turbine output and the increased cost, but failed to quantify these energy impacts. Save RGV from LNG stated that the Applicant failed to acknowledge that the rejection of this control technology will result in higher environmental impacts and did

not explain the characteristics that exist at its facility that make the use of an Oxidation Catalyst infeasible. Save RGV from LNG stated that the Applicant relied on PSDTX1386 as an example of rejecting oxidation catalyst due to economic infeasibility, but that PSDTX1386 included the use of an oxidation catalyst to reduce VOCs and CO. Save RGV from LNG stated that the Applicant proposed and TCEQ is approving control technologies that do not limit emissions to the maximum degree of reduction as required, but are instead proposing and approving these control technologies that are available and cheap.

FJS Risk Scientists stated that BACT for SO₂ and H₂SO₄ is specified by low sulfur content in the natural gas feedstock. However, the draft permit uses the term "grain" which is not a scientifically-recognized unit of measurement.

(VPBCC and SFRGV, Save RGV from LNG, FJS Risk Scientists, John Henry Young)

RESPONSE 39:

As described in the Response above, the Applicant utilized the EPA Top-Down method for its BACT analysis. The Applicant proposed BACT for the combustion turbines as the use of Dry Low NOx (DLN) burners and modern turbine design to achieve 9 ppmvd NO_x, 25 ppmvd CO, and 2 ppmvd VOC, all corrected to dry exhaust products of combustion containing 15% oxygen. These results are consistent with other recently authorized Liquified Natural Gas refrigeration turbines in similar circumstances. This is BACT for combustion turbines used for refrigeration service in Liquified Natural Gas plants.

Commenters expressed concern that electric-driven compressors, co-generation units, or aero-derivative turbines had not been given due consideration. Electric compressors, co-generation, and aero-derivative turbines are not control technologies that can be applied to the proposed facilities (i.e. gas-fired turbines). Rather, they would be a wholesale replacement of facilities proposed by the Applicant. Historically, the EPA has not interpreted the application of BACT to require an applicant to redefine the design of the source when considering available control alternatives.⁷ The policy of not redefining the source is recognized by both EPA and TCEQ. Therefore, the TCEQ only requires the Applicant to demonstrate that the proposed facility will meet BACT.

One commenter asserted the accepted BACT for turbines at other LNG facilities has ranged between 2 and 5 ppm (The Executive Director assumes the commenter is referring to NO_x). Another commenter stated that SCR was regularly implemented in other LNG projects. A review of the RBLC and recently issued TCEQ permits for refrigeration compressor turbine systems in similar circumstances reveals NO_x emission limits ranged from 9 ppmvd to 25 ppmvd, and SCR was not utilized on these projects. The commenters are comparing the project NO_x controls to control performance achieved in co-generation units which is discussed below.

⁷ EPA New Source Review Manual, 1990, at B.13.

It is not appropriate to compare co-generation units with LNG compressor turbine units. The conditions for operation of a co-generation unit are quite different from an LNG unit. Co-generation units supplying power to an electrical grid generally operate on constant load. The performance and effectiveness of SCR and Oxidation Catalyst (OC) systems are directly dependent on constant load operation. Refrigeration turbines are subject to varying demand and mass loads which in turn results in varying NO_x and CO concentrations and tend to compromise the performance of SCR module. An OC module will perform at reduced efficiency as well. Optimal catalyst performance, for both an SCR and an OC module, requires a narrow range of temperature distribution and flow characteristics, so the ammonia injection rate must be adjusted to account for fluctuations in NO_x, temperature, and mass flow happening at the same time. For an SCR to operate efficiently the amount of ammonia to inject is critical. Too much results in ammonia slip, and too little results in excess NOx emissions. With changing loads, the feedback time for adjusting ammonia is too slow and stack emissions or ammonia slip cannot be maintained while the load is being changed. Due to these technical obstacles SCR and OC have not normally been considered BACT for LNG facilities.

Another commenter pointed to Golden Pass LNG (PSDTX1386) as an example where OC was used to reduce VOCs and CO. Golden Pass LNG uses a cogeneration type design wherein the turbines provide mechanical power for refrigeration but are connected to downstream duct burners and HRSG configurations. However, because the Golden Pass design is a co-generation design, it is not a comparable similar system and would be a wholesale replacement of facilities that the Applicant has proposed. As has also already been discussed, the TCEQ does not have the regulatory authority to require one type of facility design over another so long as an applicant can demonstrate that the proposed facilities meet the requirements of a particular authorization, i.e., BACT.

One commenter stated that the costs of SNCR-related ammonia emissions and catalyst replacement should be considered irrelevant. If this project was to be constructed in a non-attainment county, then Lowest Achievable Emission Rate (LAER) would be applicable and cost would not be a consideration. However, the proposed project, if authorized, would be constructed in Cameron county which is in attainment, and so BACT is applicable and cost may be considered. While SNCR technology is technically infeasible for turbines, the TCEQ took the comment to be an appropriate comment as well for SCR-related ammonia emissions and catalyst replacement.

Various commenters questioned the cost estimates for SCR and Oxidation Catalyst (OC) modules. Cost effectiveness estimates were based on recent vendor information for capital costs and expendable supplies costs. Additionally, cost estimate methods were based on: 1) the EPA Cost Control Manual, 2) EPA's Cost-Effectiveness of Oxidation Catalyst Control of Hazardous Air Pollutant (HAP) Emissions from Stationary Combustion Turbines, and 3) EPA's Air Pollution Control Fact Sheet: Selective Catalytic Reduction (SCR), EPA-452/F-03-032. This EPA guidance is widely used and accepted for such purposes and was accepted as well for this project.

Certain commenters suggested using a SCR in combination with another control technology. Since the proposed technology and controls meet BACT, it is not necessary to pursue other alternatives. Additionally, the same technical challenges would remain; i.e., the varying load on refrigeration turbines which in turn compromises SCR performance.

Certain commenters expressed concern that the fuel gas maximum sulfur concentration was expressed in grains rather than scientific units. A grain is a unit of weight equivalent to 1/7000 of a pound, which is commonly used to specify sulfur content in natural gas. It is a legacy unit of measurement but is one which is almost universally used in the energy sector. The EPA also uses the grain unit of measurement to define the maximum allowable amounts of sulfur in pipeline gas and natural gas.

COMMENT 40: BACT for GHGs

Save RGV from LNG stated that the elimination of Carbon Capture Storage (CCS) for GHGs reduction is inadequately supported in the BACT analysis and, therefore, the TCEQ may not rely on the analysis of BACT in its permitting decision. Save RGV from LNG stated that EPA has identified CCS as a technically feasible control option for GHG emissions at a similar terminal and therefore, issues of environmental impact, energy impact, and cost should be addressed in the BACT analysis. Save RGV from LNG stated that the Applicant dismissed CCS based on the examined cost and environmental impacts associated with a different LNG project, but the BACT analysis process requires an applicant to analyze these impacts relative to the proposed project.

VPBCC and SFRGV stated that in Table 5-2 of the application, the Applicant cites an expected GHG control efficiency of 1 - 15% based on the control technology "turbine design/efficiency", which, based on a later discussion in the comment, seems to be the difference between frame and aero-derivative turbines and that the application provides no support for this assumption.

(VPBCC and SFRGV, Save RGV from LNG)

RESPONSE 40:

The Applicant used the EPA Top-Down method for its BACT analysis, which is accepted by TCEQ. Step 1 requires that all available control options that are potentially applicable to the proposed source are identified. The full range of emissions minimization techniques should be considered such as, "end of stack" controls, fuel and materials choices, production process design and work practices, innovative technologies, and energy usage and conservation techniques. Step 2 allows for the elimination of control options that are technically infeasible. Each technology should be demonstrated, that is, previously installed and operated successfully on a similar facility, or if undemonstrated, the Applicant must determine whether the technology is both available and applicable. Technologies identified in Step 1 that are neither demonstrated nor found to be both available and applicable are eliminated under Step 2.

CCS was identified as a possible control in Step 1 by the Applicant. CCS is a technology in which CO₂ and other GHGs are captured from the turbines, compressed, and transported via pipeline for storage or use (such as for enhanced oil recovery).

The three main approaches for CCS are pre-combustion capture, post-combustion capture, and oxyfuel combustion. Pre-combustion control is used on such processes as gasification where a syngas of hydrogen and CO₂/CO is produced. The CO₂ can be captured prior to combustion which can result in lowered overall costs compared to post-combustion control. Post-combustion control is removing CO₂ from the exhaust gas of facilities and using a CO₂ removal unit similar to an acid gas removal unit. Various solvents and processes exist currently for post combustion control. Oxyfuel combustion is the use of pure oxygen rather than air for combustion. This results in a highly concentrated CO₂ exhaust stream, which lowers capture costs. After CO₂ removal with one of the above processes, the removed CO₂ is purified, compressed, and sent to a pipeline for deep well injection.

In addition, no recently authorized LNG plant has been required to install CCS as part of a PSD BACT determination and no currently operating LNG plant utilizes CCS. Other facilities may have installed CCS but the TCEQ is not aware that the use of CCS was the result of a PSD BACT determination. It should also be noted that many currently operating CO₂ capture and transport systems were in use well before the requirement to apply BACT to GHGs existed. Also, some facilities did not demonstrate permanent storage of CO₂ but merely temporary storage or no storage at all. Other projects have proposed CCS, but they are not operating.

According to EPA GHG permitting guidance issued in March 2011, a technology is considered technically feasible if it has been demonstrated and operated successfully on the same type of source under review or it is available and applicable to the type of source under review. When examining the RBLC and TCEQ permits, no instances of using CCS as BACT for control of GHGs from natural gas fired turbine facilities are found.

Save RGV from LNG stated that EPA has identified CCS as a technically feasible control option in its draft statement of basis for PSD-TX-1302-GHG for GHG emissions from Freeport LNG. When that Statement of Basis is reviewed further, the EPA did conclude that CCS was not BACT for the Freeport site based on cost analyses of the additional equipment, energy penalty from the combustion turbine, and collateral increases of criteria NAAQS pollutants (NO_x, CO, VOC, PM₁₀, SO₂). Additionally, with regard to Freeport LNG, following the U.S. Supreme Court decision in *UARG v. EPA*, 134 S. Ct. 2427 (2014) which held that EPA may not treat GHGs as an air pollutant for purposes of determining whether a source is a major source required to obtain a PSD permit, the Freeport Pretreatment and LNG facility was no longer considered a major source. Therefore, in 2014, Freeport withdrew its application with EPA for a GHG PSD permit (because it was no longer required) and in 2015, TCEQ voided its PSD permit.

In addition, no geologic sites have been found in the immediate vicinity of Rio Grande LNG that are viable for large-scale, long-term CO₂ storage. Note that Sabine Pass LNG in

Louisiana examined the cost and environmental impacts associated with capturing and transporting CO₂ in a 30-mile CO₂ pipeline, and the financial and other costs were found to be prohibitive, thus allowing the elimination of consideration of CCS. This was also found to be the case when Corpus Christi Liquefaction in Texas performed a CCS cost analysis. The CO₂ pipeline located closest to the Rio Grande LNG is over 300 miles away and is owned by Denbury Resources. Given these considerations, the elimination of CCS as BACT in Step 2 of the EPA Top-Down BACT method due to its technical infeasibility was determined to be acceptable.

Regarding Table 5-2 and its representation of GHG control efficiency, the revised application does not contain an estimate of control efficiency of GHGs. In section 5.4.5 of the application, the Applicant compared the relative merits of frame and aero-derivative turbines. Although potentially more efficient, aero-derivative turbines provide much less power input than standard industrial gas turbines. At the time of the submittal, larger aero-derivative turbines were being developed for mechanical drive applications but were not yet proven in service. Therefore, the representation of relative turbine efficiencies was not determinative for comparison. However, as described in the previous Response, aero-derivative turbines are not control technologies that can be applied to the proposed facilities.

COMMENT 41: Thermal Oxidizers

VPBCC and SFRGV stated the BACT analysis for the thermal oxidizers is incomplete and inadequate and the draft permit fails to require BACT. VPBCC and SFRGV stated that the Applicant identified low NO_x burners (LNBs) as BACT for two of the thermal oxidizers that will be used to control emissions from the condensate tanks (Thermal Oxidizers 1 and 2), truck loading operations, and waste gas emissions, but will be authorized for 0.14 lb/MMBtu, and that the Applicant identified ultra-low NO_x burners with limits of 0.10 lb/MMBtu for the remaining thermal oxidizers. VPBCC and SFRGV expressed concern that the limits exceed TCEQ's BACT guidelines, which limits LNBs to 0.06 lb/MMBtu or less. In addition, VPBCC and SFRGV expressed concern that the Applicant stated that LNBs are a poor choice, especially for Thermal Oxidizers 1 and 2, as condensate vapors impair the functioning of LNBs. Specifically, VPBCC and SFRGV stated condensate vapor issues could be addressed with SCR, but the Applicant rejected SCR as technically infeasible due to the high exhaust temperature. VPBCC and SFRGV stated the Applicant failed to address that the high exhaust temperature could be reduced to an acceptable range for SCR operation by adding a heat exchanger between the thermal oxidizer and the SCR. Finally, VPBCC and SFRGV expressed concern that the Applicant did not contact SCAQMD or a range of thermal oxidizer vendors to inquire about known thermal oxidizers or incinerators using SCR for NO_x control and the cost for such options.

RESPONSE 41:

A review of the RACT/BACT/LAER Clearinghouse (RBLC) entries for Thermal Oxidizers did not reveal the use of SCR for any acid-gas type thermal oxidizers. The few thermal oxidizers that did utilize SCR were not combusting streams with sulfur content, as

proposed in this application. Therefore, SCR with the use of acid-gas type thermal oxidizers is not a demonstrated technology.

The Applicant proposed Low NO_x burners and Ultra-Low NO_x burners to control NO_x as BACT for the thermal oxidizer. The proposed use of Low NO_x burners (0.14 lb NO_x/MMBtu) and Ultra-Low NO_x burners (0.10 lb NO_x/MMBtu) are within the middle range of control of 0.05 to 0.38 lb NO_x/MMBtu for recent LNG acid gas thermal oxidizers. The use of Low NO_x burners is the control for almost all thermal oxidizers identified in the RBLC search. The Applicant's proposal is therefore considered BACT.

COMMENT 42: Sulfur Compounds

VPBCC and SFRGV stated that sulfur content of the fuel samples may have been underestimated and expressed concern because PSD review was not triggered for any sulfur compounds. VPBCC and SFRGV stated that because PSD was not triggered, no BACT analysis was conducted for sulfur compounds.

RESPONSE 42:

The PSD program is only applicable to a major emitting facility, which is a facility that is one of the 28 named sources and emits or has the potential to emit 100 tons per year (tpy) or more of any air pollutant or any other source with the potential to emit 250 tpy or more of any air pollutant. 42. U.S.C. § 7479(1). However, the TCAA requires that the proposed facility must use at least the BACT in order for a permit to be granted. *See* TCAA § 382.0518(b)(1). Thus, the requirement to conduct a BACT analysis is not contingent on whether a particular pollutant or project triggered PSD. A BACT analysis was performed as described in Response 38. It was determined that BACT for sulfur compounds at the proposed facility is the use of low-sulfur fuel.

In addition, emissions of SO₂ and H₂SO₄ were reviewed as part of the impacts analysis. See Response 30 for a discussion of how the sulfur content of the fuel was calculated.

COMMENT 43: Diesel Tanks/Condensate Tanks and Condensate Loading

FJS Risk Scientists stated that the BACT specified for the condensate tanks and condensate loading is insufficient to protect public health and the environment. FJS Risk Scientists also stated that the BACT specified for diesel tanks and Compressor Station 3 is insufficient to protect public health and the environment.

RESPONSE 43:

The determination of BACT for the above-mentioned tanks was performed in accordance with the EPA Top-Down Method for BACT Analysis. The conclusions reached by the Applicant after this review were in alignment with TCEQ's own general guidance on BACT for storage tanks.

BACT for storage tanks requires that uninsulated tank exterior surfaces exposed to the sun shall be white or aluminum, and all storage tanks must be equipped with permanent submerged fill pipes. A reflective exterior surface reduces the energy received from the sun which reduces the temperature of the stored liquids and so reduces the volatility; and submerged filling prevents entrainment of any liquid droplets in the tank atmosphere. Special Condition No. 14 incorporates these BACT requirements and applies to all the above-mentioned tanks.

These requirements help to reduce vaporization of the contents and so are protective of public health and the environment. For the diesel storage tanks and the Compressor Station No. 3 condensate tank, which vent small amounts of VOCs to the atmosphere, additional controls beyond what are mentioned above are not considered economically reasonable.

The Compressor Station No. 3 condensate tank, sized at 12,000 gallons, collects low volatility liquids from the inlet separator and pigging operations. The other condensate tanks, T-3501A and T-3501B, are sized at 290,000 gallons each and receive natural gas liquids removed from the incoming natural gas feed. A vapor collection system is proposed to route truck loading vapors to the thermal oxidizers for VOC destruction. This is BACT for high volatility liquid storage.

COMMENT 44: Flares

VPBCC and SFRGV stated the Applicant failed to minimize VOC emissions from flares. Specifically, VPBCC and SFRGV referenced that three ground flares are to be used only for maintenance start up and shutdown (MSS) and for process upsets. However, VPBCC and SFRGV stated that despite arguing that the facility design has reduced flaring by recovering and directing boil off gas (BOG) to the high-pressure fuel system, the Applicant has failed to show that it has in fact minimized waste gas flows under normal conditions and under maintenance start up and shutdown conditions (MSS). VPBCC and SFRGV stated that the Dominion Cove Point Liquefaction Facility projected a lower potential to emit VOCs from flaring.

RESPONSE 44:

The purpose and intent of flares at the proposed facility are to control and combust VOCs such that they are not emitted to the atmosphere. They are designed to destroy (by combustion) 99% of VOC molecules with 3 or less carbon atoms and 98% of VOC molecules with more than 3 carbon atoms. The flares are essential for control of VOCs during MSS. Prior to maintenance activities such as combustion or hot gas path inspections and major overhauls, the LNG train must be depressurized by routing the stream to the flares. Use of flares during MSS is BACT.

COMMENT 45: Diesel Engines for Essential Generators and Seawater Firewater Pumps

FJS Risk Scientists stated that the BACT specified for the diesel engines and seawater firewater pumps is insufficient to protect public health and the environment. FJS Risk Scientists stated that the BACT specified for natural gas generators is insufficient to protect public health and the environment.

RESPONSE 45:

The determination of BACT for the above-mentioned emergency engines was performed in accordance with the EPA Top-Down Method for BACT Analysis. The conclusions reached by the Applicant after this review were in alignment with TCEQ's own general guidance for BACT for emergency engines.

The diesel engine generators and firewater pumps are subject to New Source Performance Standards (NSPS) Subpart IIII, 40 CFR §§ 60.4200(a)(1)(i) and 60.4200(a)(1)(ii). The natural gas emergency generators will also be subject to NSPS Subpart JJJJ, 40 CFR § 60.4230(a)(4)(iv).

The engines all mentioned above are proposed for emergency use only. Special Conditions Nos.4 and 5 require that all engines are limited to 100 hours per year for maintenance and testing. Special Condition No. 7 limits sulfur in the diesel fuel to 15 ppm by weight and Special Condition No. 8 limits fuel gas to 0.01 grains per 100 dry standard cubic feet. Compliance with federal regulations and the permit special conditions is protective of public health and the environment.

COMMENT 46: Fugitive Emissions

Commenters expressed concern that the BACT specified for fugitive emissions is not protective of public health and the environment. VPBCC and SFRGV stated that the Applicant represented it will implement the TCEQ 28 VHP leak detection and repair (LDAR) program as BACT for fugitive VOC leaks, but expressed concern that the draft permit does not require that the Applicant use inherently leakless components as BACT. VPBCC and SFRGV stated that leakless designs are available for pumps, flanges, and valves and that the BACT analysis must consider the use of such equipment. VPBCC and SFRGV states that where leakless components are not available, an LDAR program must be adopted and the BACT analysis must consider alternative, more rigorous LDAR protocols, specifically the Bay Area Air Quality Management District (BAAQMD) Regulation 8, Rule 18 (8-18), standards for equipment leaks instead of those in TCEQ's 28 VHP LDAR standard.

(VPBCC and SFRGV, FJS Risk Scientists)

RESPONSE 46:

As discussed in the TCEQ's Air Permit Technical Guidance for Chemical Sources - Fugitive Guidance Document (APDG 6422), uncontrolled fugitive emissions are quantified by the number and type of components and an emission rate factor for each component type. Fugitive emission factors have been established by case studies for several types of facilities, including oil and gas facilities. Estimates are based on the assumption that all piping components are leaking vapors into the atmosphere at all times. For purposes of permitting, the emission rate is based on the number of components of a specific type in a defined area multiplied by the appropriate fugitive emission factor. The emission rate for a component type must also be speciated for the compounds found within the plant. All components must be included in the emission estimate, even components that are exempt from monitoring. Note that oil and gas production operations factors must be multiplied by the VOC weight percent (i.e., methane and ethane are excluded) in the gas stream to estimate the total VOC rate for permitting purposes.

TCEQ Tier I BACT for estimated VOC fugitives greater than 25 tpy is the use of 28VHP Leak Detection and Repair (LDAR), which includes:

- a leak definition of 500 ppmv for all components except for pumps and compressors (for which the leak definition is 2000 ppmv);
- for compounds with an applicable vapor pressure > 0.044 psia at 68 °F;
- quarterly instrument monitoring;
- repair and maintenance of leaking components; and
- comparable to federal requirements found in 40 CFR 60 Subpart VVa and 40 CFR Part 63 Subparts H and CC.

Estimates of fugitive emissions rates were included in the air quality analysis, in which air quality effects were found to be protective, as discussed in Response 6.

Regarding fewer numbers of components for this plant as opposed to another LNG export facility, recall that this is a PSD case-by-case permit. As described in Responses 6 and 19, the Executive Director conducted a thorough review of the project as proposed by the Applicant.

Special Condition No. 15 details the LDAR requirements associated with 28VHP, which have been established as conditions to ensure minimal fugitive emissions for various facilities (including chemical plants) throughout Texas. Texas has an EPA approved State Implementation Plan (SIP) and is authorized and delegated to issue federal permits in Texas. Thus, Texas is not required to incorporate regulations from other states into its permit reviews. As part of the approved SIP for Texas, fugitive monitoring for non-attainment areas is required and defined in 30 TAC 115,

Subchapter D. Cameron County is not located in a non-attainment county. However, the 28VHP fugitive monitoring conditions found in Special Condition No. 15 are more stringent than those required in non-attainment counties as found in 30 TAC Chapter 115, Control of Air Pollution from VOCs, Subchapter D, Petroleum Refining, Natural Gas Processing, and Petrochemical Processes.

Preliminary Determination Summary (PDS)

COMMENT 47: The Executive Director's PDS

Commenters asked several questions about the Executive Director's PDS.

RESPONSE 47:

Specific comments and issues raised concerning the PDS are addressed in the comments below. The Executive Director notes that many of the comments referred to the "draft permit," however, the context of the comments made clear that the commenters were referring to the PDS. In addition, commenters complain that the PDS omits information, supporting documentation, and calculations. As described in Response 19, the Executive Director is required to issue a preliminary determination on applications. The PDS does not contain the entire application, supporting calculations, or the Executive Director's technical review of the application. Rather the purpose of the PDS is to explain the Executive Director's preliminary determination and to provide a high-level summary of the key elements required during the technical review of applications subject to federal requirements (i.e., the Prevention of Significant Deterioration (PSD) program).

The TCAA and the TCEQ rules require applicants to make a copy of the application and a copy of the Executive Director's preliminary decision on the application available to review and copy at a public place in the county in which the facility is proposed to be located. TCAA § 382.056(d); 30 TAC § 39.405(g). Specifically, 30 TAC § 39.405(g)(1) requires a copy of the administratively complete application to be available for review and copying beginning on the first day of newspaper publication of the first public notice and to remain available during the public comment period. During the second notice period, 30 TAC § 39.405(g)(2) and (3) require a copy of the complete application (including any subsequent revisions) and the ED's preliminary decision, the draft permit, preliminary determination summary, and air quality analysis to be available for public viewing beginning on the first day of the publication of the second public notice. The Applicant represented that the application was made available in accordance with the TCEQ rules at the Brownsville Public Library Main Branch, 2600 Central Boulevard, Brownsville, Cameron County. In addition, the application was available at the TCEQ Central Office in Austin and the TCEQ Harlingen Regional Office, 1804 W. Jefferson Ave, Harlingen, Texas.

COMMENT 48: PDS Section III. Project Description

FJS Risk Scientists stated they found the project description in the Executive Director's Preliminary Determination Summary (PDS) unclear, which they believe raises questions about planned methods and activities. FJS Risk Scientists stated that in Section III. Project Description, Compressor Station 3 is discussed, but it is unclear where Compressor Stations 1 and 2 reside or if there are other compressor stations. FJS Risk Scientists stated there are inexact descriptions and stated that the PDS refers to "two back-up natural gas generator sets," which leaves one to question exactly how many generators there are in total.

RESPONSE 48:

A separate project, the Rio Bravo Pipeline, will transport natural gas to the Rio Grande LNG terminal. The pipeline will utilize three compressor stations to pressurize the gas being transported via pipeline. Compressor Station 1 is at mile 0, the beginning of the pipeline's route, or 137 miles away from the proposed facility. Compressor Station 2 is at mile 66, or 71 miles away from the proposed facility. As a result, Compressor Stations 1 and 2 will each be authorized as part of separate projects. Compressor Station 3 is physically adjacent to the proposed facility, providing a pressure boost for feeding into the facility process system. Emissions from Compressor Station 3 have been aggregated into the proposed facility as part of the permit review.⁸ At Compressor Station 3, the Applicant proposed to provide two back-up natural gas electric generator sets for emergency use.

COMMENT 49: PDS Section IV. Emissions

Save RGV from LNG stated that there are inconsistencies between the proposed allowable emission rates found in the Section IV of the PDS and Table 3-1 in the PSD permit application. Save RGV from LNG stated these discrepancies should be explained or corrected.

RESPONSE 49:

The Applicant submitted proposed estimated annual emissions, which were summarized in Table 3-1 of the application. The TCEQ requires applicants to submit an Emission Point Summary table (Table 1(a)), which must include each source and associated emission rates. The comment did not point to any specific inconsistencies, and the Executive Director is unaware of any inconsistencies between what was proposed in the application and what was summarized in the PDS. However, as described in Response 19, the Executive Director conducted a technical review of the

⁸ Compressor Station 3 is authorized under Permit by Rule (PBR) 140797. Compressor Station 3 is owned by Rio Bravo Pipeline, which is owned by NextDecade. NextDecade also owns the LNG facility and export terminal. The emission limitations contained in the PBR for Compressor Station 3 are identical to those included in the MAERT but are not cumulative, except the MAERT has more stringent limitations for pigging emissions.

application, which included a review of the proposed emissions and calculations. Based on the technical review, the Executive Director developed the draft permit, which includes a Maximum Allowable Emissions Rate Table (MAERT).

COMMENT 50: PDS Section V. Federal Applicability

FJS Risk Scientists stated under Section V of the PDS, a project emissions rate of 608 tons per year of VOC is shown, but it does not identify exactly which compounds will likely be emitted. FJS Risk Scientists also stated that the section presents a project emissions rate of 381 tons per year of unspecified particulate matter. FJS Risk Scientists stated that no further chemical analytical data is presented in the draft permit to clarify the chemical identity of the VOC or PM. They further stated that in order for the TCEQ to fulfill its public health protection mandate, the TCEQ should assume that the VOCs include "the most toxic synthetic compound" known as 2,3,7,8-Tetrachlorodibenzodioxin (TCDD).

RESPONSE 50:

The Applicant was required to fully speciate all expected VOC emissions, which were reviewed for safe health effects by modeling their impacts and comparing them against TCEQ's Effects Screening Levels (ESLs). This is further discussed in Section VII F, Tables 8, 9, and 10 of the Preliminary Determination Summary as well as in Response 6 above. PM emissions were also investigated and found to comply with federal and state standards as discussed further in Response 6. With regard to PM speciation, for the majority of PM, especially from combustion of natural gas, toxicology review for PM species is found to be sufficient if the AQA shows compliance with NAAQS for PM/PM₁₀/PM_{2.5}. One PM species, H₂SO₄, is required to be further reviewed to ensure compliance with the State Property Line Standard, which was also found to be acceptable as discussed in Response 6.

It is not the Executive Director's practice to speciate VOCs within the draft permit unless there are concerns about health effects that require placing appropriate limits on particular (usually hazardous) species. Further, TCDD is not proposed to be authorized. In addition, for this type of facility, with natural gas fired refrigerant compressors, a thermal oxidizer, flares, and other specified equipment, the VOCs from this project are not expected to contain TCDD. As described in more detail in Response 19, both the TCAA and the TCEQ rules provide for an extensive review of the application to ensure that emissions from the proposed plant will not cause or contribute to an exceedance of the NAAQS or adversely affect human health or the environment.

COMMENT 51: PDS Section VI. Control Technology Review

FJS Risk Scientists stated that in Section VI. Control Technology Review, does not direct the Applicant to abide by "good combustion practices." Further they comment that the PDS does not include settings, operational parameters, or equipment required to obtain "good combustion practices."

FJS Risk Scientists also stated that Section VI. states that the Applicant will minimize SO₂ and H₂SO₄ emissions by firing pipeline-quality natural gas with a sulfur content not exceeding 0.01 grain per 100 standard cubic feet (scf). FJS Risk Scientists stated the term "grain" is not defined and there are no provisions in the draft permit for assuring the sulfur content of the feedstock is within any limit.

RESPONSE 51:

Regarding "good combustion practices," combustion occurs when fossil fuels such as natural gas react with oxygen in the air to produce heat. Natural gas is mostly methane (CH₄), which when combined with air, produces carbon dioxide and water along with heat. Unless combustion is properly controlled, incomplete combustion results in high concentrations of undesirable products such as soot, carbon monoxide, sulfur dioxide, and nitrogen oxides can also form. Good combustion practices are the optimization of air and fuel flow to minimize incomplete combustion. It is very common for BACT for certain pollutants from combustion sources to be controlled and reduced through good combustion practices, as can be seen when reviewing EPA's RACT/BACT/LAER Clearinghouse (RBLC) for natural gas fired turbines used for power generation as well as for refrigeration compression. For example, good combustion practices or efficient combustion are listed as BACT in EPA's RBLC for carbon dioxide equivalent at Cameron LNG in Louisiana (PSD-LA-766(M3)), for VOCs at Corpus Christi Liquefaction in Texas (PSDTX1498), and for CO at Dominion Cove Point LNG in Maryland (PCS Case No. 9318).

Requirements to ensure good combustion practices occur are found in the Special Conditions of the draft permit. Specifically, Special Condition Nos. 7 and 8 specify the use of low sulfur fuels. Special Condition No. 11 specifies pollutant concentration limits for the combustion turbines. In addition, limited and well-defined MSS events are found in Special Condition Nos. 11 and 12. Opacity requirements (no soot) are found in Special Condition No. 13 and initial determination of compliance (stack testing) for the combustion turbines and thermal oxidizers to verify they comply with their respective emission limits is found in Special Condition No. 17. Special Condition No. 18 requires continuous demonstration of compliance, while Special Condition Nos. 19 and 20 specify operating conditions for the Thermal Oxidizer so that good combustion occurs.

A grain is a unit of weight equivalent to 1/7000 of a pound, which is commonly used to specify sulfur content in natural gas. It is also used to describe outlet loading for a baghouse, which is a common control for particulate emissions. Special Condition No. 8 defines the sulfur limit for fuel gas to be used for combustion at the plant as 0.01 grains sulfur per 100 dry standard cubic feet. Special Condition No. 9 requires the Applicant to sample the fuel upon request by the TCEQ, and Special Condition No. 17 requires fuel sampling to be performed if stack sampling for SO₂ is not done. Associated recordkeeping requirements are found in Special Condition Nos. 17 and 18.

COMMENT 52: PDS Section VII. Air Quality Analysis

FJS Risk Scientists stated that Section VII. A. De Minimis Analysis, does not demonstrate that any compounds are below levels of regulatory concern. FJS Risk Scientists stated this section is missing data and seems impossible to enforce.

FJS Risk Scientists stated that Section VII. B. Air Quality Monitoring is nonsensical and uses the terms monitoring and modeling in an interchangeable manner. FJS Risk Scientists also commented that the section states that it presents EPA data on PM_{2.5} for background comparison, but that the data is not presented so that it can be understood.

FJS Risk Scientists stated that Section VII. C. National Ambient Air Quality Standards is internally inconsistent in that it states the levels exceed limits, but in the next paragraph states they do not exceed limits. FJS Risk Scientists stated that the model used, its input parameters, and modeling assumptions are not provided in the PDS.

FJS Risk Scientists stated that in Section VII. D. Increment Analysis, the model used, its input parameters, and modeling assumptions are not provided.

FJS Risk Scientists stated that Section VII. E. Additional Impacts Analysis states that impacts for Big Bend National Park were modeled, but the section omits impacts expected on air quality to South Padre Island. FJS Risk Scientists stated that the model does not address how much air quality degradation, including smog, is likely to occur near the plant.

FJS Risk Scientists stated that Section VII. F. Minor Source NSR and Air Toxics Review is ambiguous and does not provide useful information on the permitting process. FJS Risk Scientists asked why this section is included.

John Henry Young stated that TCEQ's dismissal of GHG in Section VII. G Greenhouse Gases is illogical, irresponsible, and dishonest. Mr. Young stated that the TCEQ does not want to require the Applicant to do an air quality analysis or an additional impacts analysis, doesn't want to require the Applicant to install the BACT irrespective of cost, and does not want any additional public involvement in the permitting process.

RESPONSE 52:

As discussed in Response 47, the PDS is a high-level summary of the PSD review performed on the application and is not the draft permit as suggested by the commenter. The full details regarding the impacts evaluation, including the model used, input parameters, and modeling assumptions, are included in the Air Quality Analysis (AQA) provided by the Applicant, the TCEQ's Air Quality Analysis Audit Memorandum that summarizes the review of the Applicant's AQA, and the Executive Director's technical review of the application.

Section VII. A. De Minimis Analysis summarized the demonstration that all emissions proposed to be authorized are below applicable standards. For the De Minimis Analysis, the modeling procedure begins with a preliminary impact determination to predict whether the proposed emissions could make a significant impact on existing air quality. De minimis values are used to determine whether a significant change in air quality is expected due to the emissions associated with the proposed source. If the source does not make a significant impact for a pollutant of concern, the demonstration is complete. If there is a significant impact, then a full NAAQS and PSD increment analyses are required. Tables 1 and 7 in the PDS present the model predicted GLC_{max} from the proposed source emissions for PM₁₀, PM_{2.5}, NO₂, CO, and SO₂ for all averaging times compared to the associated de minimis levels. Since the predicted 1-hr and annual NO₂ concentrations were greater than the associated de minimis levels, full NAAQS and PSD increment impacts analyses were required. The total concentration for the full NAAQS analysis for both 1-hr and annual NO₂ were determined by adding the model predicted GLC_{max} from the site-wide modeling, including off-property sources, to the appropriate background concentration. See Response 6 for more information regarding the NO₂ monitor relied on in the full NAAQS analysis. Table 3 of the PDS compares the total concentrations to the NAAQS, clearly demonstrating that the concentrations are below the applicable standards. A similar type of analysis is conducted for the full PSD annual NO₂ increment analysis, except that the modeled emission inventory includes increment-affecting sources and monitored background concentrations are not considered in the analysis. Table 5 of the PDS compares the total concentration to the Increment, clearly demonstrating that the concentration is below the standard.

Section VII. B. Air Quality Monitoring of the PDS does not use the terms modeling and monitoring interchangeably. The section addressed the preapplication analysis requirement that the application contain an analysis of ambient air quality in the area that a major stationary source would affect. *See* 40 CFR § 52.21(m), which provides that the analysis shall contain continuous air quality monitoring data gathered for purposes of determining whether emissions would cause or contribute to a violation of the NAAQS. However, the federal rules include an exemption to 40 CFR § 52.21(m) in the form of significant monitoring concentrations (SMCs).⁹ *See* 40 CFR § 52.21(i)(5)(i). The SMCs allow permitting authorities to exempt applicants from the preapplication analysis requirements if the predicted concentrations associated with the proposed source's emissions increase are less than the applicable SMCs. As provided in Table 2 of the PDS, the model predicted the GLC_{max} for emissions of PM₁₀, NO₂, and CO are all less than their respective SMCs and thus, no additional preapplication analysis was required.

⁹ On January 22, 2013, the U.S. Court of Appeals for the District of Columbia Circuit vacated the PSD rules establishing PM_{2.5} SMCs. As a result, PSD applicants must address the preapplication analysis requirement for PM_{2.5}. The analysis may be based on continuous air quality monitoring data from the existing monitoring network, provided the monitoring data are shown to be either representative or conservative for the air quality near the proposed site.

Section VII. B. Air Quality Monitoring of the PDS includes the calculated ambient PM_{2.5} monitoring data for both the 24-hr and annual averaging times from an existing monitor. Also included is the EPA air quality system (AQS) ID, the location, and justification regarding the representativeness of the monitor selected for the analysis. The calculated ambient concentration of 26 µg/m³ for the 24-hr averaging time and 9.5 µg/m³ for the annual averaging time are both less than the NAAQS and the analysis meets the preapplication analysis requirement of 40 CFR § 52.21(m).

Section VII. E. Additional Impacts Analysis includes a specific reference to the Big Bend National Park because impacts to Class 1 areas are considered for projects subject to federal review. South Padre Island is not a designated Class 1 area; however, the AQA did evaluate potential impacts to South Padre Island. Specifically, the air dispersion model estimates ground level concentrations out 50 km (approximately 30 miles) from the proposed source. South Padre Island is located within 50 km of the proposed site, and therefore, impacts to the Island were adequately considered. See Response 6 for more information on the AQA performed for this project and Response 11 for additional information on the receptor grid.

Section VII. F. Minor Source NSR and Air Toxics Review of the PDS contains a summary of the review conducted for those pollutants that did not trigger PSD. Specifically, these pollutants are reviewed in accordance with the TCEQ's federally-approved minor source new source review (NSR) permitting program. See Response 6 for details of the review performed on this application.

In regard to Section VII.G. Greenhouse Gases, the Executive Director's staff reviewed GHG emissions from the proposed plant. Specifically, staff ensured that GHG emission calculations were performed using acceptable EPA developed emission factors, that sources expected to emit GHGs were listed on the MAERT and limited to approved emission rates, and that BACT for GHGs were applied to applicable sources. See Responses 24 and 40 for a further discussion on GHG emissions.

COMMENT 53: PDS Section VIII. Conclusion

FJS Risk Scientists stated Section VIII. Conclusion states that the proposed facility meets all regulatory and permitting requirements, but that this statement is not supported by information provided in the draft permit and is false.

RESPONSE 53:

As described in Response 47, the purpose of the PDS is to explain the Executive Director's preliminary determination and to provide a high-level summary the key elements required during the technical review of applications subject to federal requirements. The Executive Director reviewed the permit application in accordance with the applicable law, policy, procedures, and the Agency's mission to protect the state's human and natural resources consistent with sustainable economic development. As described throughout this Response, the Executive Director determined that the permit application meets all applicable regulatory requirements.

Draft Permit

COMMENT 54: Draft Permit/Jargon

FJS Risk Scientists stated that the draft permit and associated documents overuse jargon and are unclear and open to broad interpretation. FJS Risk Scientists provided the following terms as examples: "ground flares"; "pigging emissions"; "FGR"; "SCR"; "oxidation catalyst"; "RBL". FJS Risk Scientists stated that it is not practical or cost effective for them to review because of the use of jargon and that the TCEQ should rework the documents to define terms and enhance transparency. FJS commented that TCEQ should focus specifically on the industrial processes proposed and their likely impacts. FJS Risk Scientists stated that TCEQ should heed basic technical writing fundamentals such as including a table of contents, page numbers, numbering paragraphs, and a list of acronyms. Timothy Jarvis stated the draft permit was a joke and that it should have been five to six volumes.

(Timothy Jarvis, FJS Risk Scientists)

RESPONSE 54:

The draft permit was developed according to the representations made in the permit application, and applicable regulations. The draft permit does not contain the entire application, supporting calculations, or the Executive Director's technical review of the application. However, these documents were available for public review as described in Response 47.

The draft permit includes both General and Special Conditions. The General Conditions (also known as the "permit face") consist of 14 general conditions with which all TCEQ air quality permit holders must comply. The Special Conditions define the operating parameters of the proposed facility and the Maximum Allowable Emissions Rate Table (MAERT) specifies the type and amount of emissions authorized to be emitted from each emission point at the plant. Each of the conditions in the permit are numbered and many contain lettered subsections identifying each particular requirement. In addition, apart from the first page, the pages in the draft permit are numbered. With respect to the commenter's reference to the use of jargon, the application, draft permit, and supporting documents such as the PDS, use commonly accepted regulatory terminology. Further, the Executive Director's staff included a list of defined acronyms in Attachment B of this Response to provide additional clarity. Accordingly, the Executive Director believes that the draft permit is sufficiently defined and transparent to allow for a meaningful review by the public.

COMMENT 55: Authorized Emissions

FJS Risk Scientists stated that the draft permit should, at minimum, contain a thorough list of all the chemicals to be emitted from the facility. In addition, FJS Risk Scientists stated that the draft permit should contain the mass of each contaminant proposed to

be emitted along with supporting calculations so that this information may be used to determine the probability of adverse health effects.

RESPONSE 55:

The draft permit does not contain supporting calculations but does contain a list of all pollutants authorized to be emitted from the facility in the form of the MAERT. The MAERT identifies each emission source and the particular emissions and limits applicable to the proposed facility. The MAERT contains the maximum emission rate for each identified contaminant. The supporting calculations are contained both in the application and the Executive Director's technical review of the application. As such, it is not necessary to include the mass of each contaminant in the draft permit. See Response 6 for a discussion of the health effects review of the emissions proposed to be authorized and Response 19 for a discussion of the permitting process.

COMMENT 56: Authorized Equipment

FJS Risk Scientists stated that the draft permit does not contain a flow diagram, which they state is needed to identify each piece of equipment, its function, and whether it is an emission source.

RESPONSE 56:

The TCEQ requires applicants to include a flow diagram when they submit an application. An applicant is bound by its representations in the application and those representations become an enforceable part of the permit.¹⁰ However, it is not the TCEQ's policy or practice to include a flow diagram as part of the permit. The draft permit includes general and special conditions for permitted operations, as well as maximum allowable emission rates from each emissions point at the proposed plant. As described in Responses 6 and 10, the TCEQ review includes an audit of all emission sources at the proposed facility. Emissions from sources not specified in the permit are not authorized, and the Applicant would be subject to possible enforcement action as described in Response 70.

COMMENT 57: Fuel

FJS Risk Scientists asked if it is possible to determine what fuel(s) are operating the equipment and if there is a fuel supply required for operation of the facility beyond the natural gas to be processed. FJS Risk Scientists stated that since the input fuel supply could potentially create an emission source, this should be identified and accounted for in the permit.

FJS Risk Scientists questioned whether the natural gas coming into the plant is pretreated prior to processing. FJS Risk Scientists stated that the identity of the chemical and physical composition of the natural gas to be processed is also not

¹⁰ 30 TAC 116.116(a).

shown. FJS Risk Scientists stated it is imperative to identify the chemical and physical composition of the natural gas to be processed in order to calculate emission rates and health consequences. In addition, FJS Risk Scientists commented that all emissions from any upstream pre-treatment should be included in the health and environmental impacts from the facility.

RESPONSE 57:

All fuels have been identified that will be used to operate the proposed facility's equipment. Only natural gas and diesel fuel have been represented by the Applicant as fuels, and the Applicant is bound by these representations.

The fuels that are authorized to be used for the turbines, thermal oxidizers, engines, and other devices are specified in Special Condition Nos. 7 and 8, the fuels authorized are ultra-low sulfur diesel, with no more than 15 ppm sulfur by weight is specified for the emergency engines. Pre-treated fuel gas, with no more than 0.01 gr sulfur per 100 dscf, is specified for all other combustion devices.

The extent of pretreatment for the pipeline natural gas upstream of the proposed facility is unknown since it was not represented by the Applicant and is beyond the scope of this application. However, once the natural gas enters the proposed facility there is a significant pre-treatment of the natural gas step. This pre-treatment includes acid gas (H_2S and CO_2) removal, dehydration, mercury, and heavy hydrocarbon removal. Removed acid gas is routed to the thermal oxidizer where H_2S and VOCs are destroyed; an absorbent medium captures the mercury which is sent for regeneration and mercury recovery offsite; and heavy hydrocarbons are captured and disposed offsite.

The purified natural gas is used for the various combustion devices and all such combustion emissions have been reviewed and evaluated. Other emissions sources (EPNs), which have been quantified and reviewed are the compressor station condensate tank, compressor station fugitive and pigging emissions, and terminal fugitive emissions. Thus, all emission sources have been identified and accounted for in the review and subsequent issuance of the draft permit.

COMMENT 58: Special Condition 1

VPBCC and SFRGV stated that Special Condition 1 provides that the permit authorizes the emissions from planned maintenance, startup and shutdown (MSS), but that the condition should clarify that these emissions are only authorized subject to Special Conditions 21, 22, and the emission limits in the MAERT.

RESPONSE 58:

The draft permit includes both general conditions, also known as the permit face, and special conditions applicable to the proposed facility. The general conditions include 14 general conditions with which all TCEQ air quality permit holders must comply. General Condition No. 10, Compliance with Rules, provides that "if more than one state

or federal rule or regulation or permit condition is applicable, the most stringent limit or condition shall govern and be the standard by which compliance shall be demonstrated." General Condition No. 8, Maximum Allowable Emission Rates, states "the total emissions of air contaminants from any of the sources of emissions must not exceed the values stated on the table attached to the permit entitled 'Emission Sources - Maximum Allowable Emission Rates.' Thus, the Applicant must demonstrate compliance with the more stringent limits, whether in the Special Conditions or in the MAERT.

COMMENT 59: Special Conditions 5 and 6

VPBCC and SFRGV stated Special Conditions 5 and 6 both indicate emergency equipment is to be tested approximately weekly but does not specify when. VPBCC and SFRGV stated that to minimize cumulative air impacts, the Applicant should be required to stagger testing of this equipment and avoid testing while other sources are in operation. VPBCC and SFRGV stated that the Applicant could minimize impacts by simply avoiding testing on days expected to have high ozone levels or by conducting tests during times of the day when fewer off-site sources are active, such as in the early morning.

RESPONSE 59:

Air dispersion modeling was conducted for the worst-case testing of all engines simultaneously. Even in this scenario the emissions authorized by this permit were deemed protective of both human health and welfare and the environment. 30 TAC 117.310(f) and 30 TAC 117.410(f) prohibit the testing of engines between the hours of 6:00 a.m. and noon. However, these regulations only apply for sources located in the Houston-Galveston-Brazoria and Dallas-Fort Worth ozone nonattainment areas. No similar rule is applicable to Cameron County, which is not a part of the above-mentioned nonattainment areas.

COMMENT 60: Special Condition 8

VPBCC and SFRGV stated that Special Condition 8 should require monitoring of the fuel gas sulfur content sufficient to determine the hourly average sulfur content.

RESPONSE 60:

The Applicant has represented that incoming pipeline gas will be monitored continuously with gas chromatograph instrumentation to ensure that it meets specifications. This incoming natural gas is then purified to remove sulfur. The purified natural gas, which also supplies the fuel gas system, will be analyzed monthly with the option to modify the measurement frequency as necessary. The sulfur content of the fuel gas is not expected to vary greatly on an hourly basis. This information will be maintained in a form suitable for inspection for a period of five years after collection and will be made available upon request to representatives of the TCEQ, EPA,

or any local air pollution control program having jurisdiction as per TCEQ record keeping requirements.

COMMENT 61: Special Condition 10

VPBCC and SFRGV stated flares are often improperly operated, producing visible emissions. VPBCC and SFRGV stated that Special Condition 10 is insufficient. Specifically, the proposed permit should provide specific terms as to how visible emissions will be monitored and recorded for enforcement purposes, rather than including a blanket prohibition. VPBCC and SFRGV stated that a video camera should be required to film the flares at all times. Further, the Applicant should be required to maintain the video footage and to make it available to the public upon request.

RESPONSE 61:

No particulate emissions are authorized from flares, and therefore, the installation of a video camera to monitor the flares is not necessary. Special Condition No. 10D prohibits visible emissions from the flares, except during periods not to exceed a total of five minutes during any two consecutive hours. If visible emissions are observed in apparent violation of Special Condition 10D, then the flares are not being operated in compliance with the permit and the permit holder may be subject to enforcement. See Response 70 for more information about the TCEQ's enforcement process.

Individuals are encouraged to report any concerns about nuisance issues or suspected noncompliance with terms of any permit or other environmental regulation by contacting the TCEQ Harlingen Regional Office at 956-430-6056 or by calling the 24-hour toll-free Environmental Complaints Hotline at 1-888-777-3186. If the facility is found to be out of compliance with the terms and conditions of the permit, it may be subject to possible enforcement action.

Citizen-collected evidence may be used in such an action. *See* 30 TAC § 70.4, Enforcement Action Using Information Provided by Private Individual, for details on gathering and reporting such evidence. Under the citizen-collected evidence program, individuals are providing information on possible violations of environmental law and the information can be used by the TCEQ to pursue enforcement. In this program, citizens can become involved and may eventually testify at a hearing or trial concerning the violation. For additional information, see the TCEQ publication, "Do You Want to Make an Environmental Complaint? Do You Have Information or Evidence"? This booklet is available in English and Spanish from the TCEQ Publications office at 512-239-0028 and may be downloaded from the agency website at www.tceq.texas.gov (under Publications, search for Publication Number 278).

COMMENT 62: Special Condition 13

VPBCC and SFRGV stated that when properly operated, combustion turbines and thermal oxidizers should produce no visible emissions. VPBCC and SFRGV questions

why Special Condition 13 allows opacity of five-percent during normal conditions and fifteen-percent opacity is allowed during MSS. VPBCC and SFRGV stated that the opacity monitoring and reporting required is insufficient to assure compliance and that visible emissions should be continuously monitored by video camera. VPBCC and SFRGV stated the current provisions are insufficient to assure compliance with a six-minute standard. VPBCC and SFRGV stated the special condition requires that opacity from each turbine and each thermal oxidizer be measured by Method 9 when visible emissions are observed, which requires that the viewer be stationed while standing within a certain distance and angle from each source; however, there is no assurance in the application that the turbines and thermal oxidizers will be situated in a location that allows for optimal observation. VPBCC and SFRGV stated that Method 9 does not require that photographic or digital evidence be taken of the plume, limiting the TCEQ's ability to enforce violations. VPBCC and SFRGV stated there is no rationale in the application or PDS to support this monitoring decision. VPBCC and SFRGV stated that, given these concerns, TCEQ should assess whether a monitoring method other than Method 9 is better able to capture opacity violations and should be required in this permit.

RESPONSE 62:

The commenter is correct when stating that these sources when operating properly are not expected to produce visible emissions, which is why only quarterly visible emission checks are required by the draft permit. Special Condition No. 13 is language the TCEQ regularly uses in permits in order to specify allowed visible emission limits consistent with 30 TAC § 101.111. The TCEQ Air Permits Division has found it helpful to include specific opacity conditions in each permit's special conditions to ensure that general opacity conditions are met and to allow permit holders some flexibility as to when a certified EPA Method 9 inspector must be present on site (especially for sites such as these for which visible emissions are not normally expected). Viewer distance and angles are specified within Special Condition 13B. Given the TCEQ's experience with using this condition for these types of emission sources, the Executive Director expects that the condition as written will be achievable and enforceable.

COMMENT 63: Special Condition 15

VPBCC and SFRGV stated that Special Condition 15 allows the creation of an off-permit exempt components list and that the exempt components list should have been included in the draft permit to allow public review and comment.

RESPONSE 63:

The exempted components list as referenced in Special Condition No. 15A is only in reference to piping, valves, connectors, pumps, and compressors as indicated at the beginning of Special Condition No. 15. The Applicant has made an engineering estimate as to how many of these types of components are expected, which was used to calculate fugitive emissions. In the early stages of the engineering design of the project, the exact components that may be allowed to be exempted have not yet been

designed or identified. In other words, that level of detail at the plant is not yet known. This level of detail is also not typical for TCEQ air quality permits, which is why the condition requires the list and that it be available upon request.

COMMENT 64: Special Condition 17

VPBCC and SFRGV stated that thermal oxidizers do not completely combust VOCs and expressed concern that Special Condition 17 requires that at initial compliance, a VOC destruction efficiency of 99.9% or VOC outlet concentration of 10 ppmvd or less be demonstrated, but the permit does not require VOCs to be sampled from the oxidizers after initial compliance is demonstrated. VPBCC and SFRGV stated that if thermal oxidizers are permitted to operate at 99.9% efficiency, the Applicant should be required to provide that they continue to work at that efficiency through repeated and regular testing of the same sort conducted at initial compliance.

RESPONSE 64:

Special Condition No. 19 requires continuous monitoring of the thermal oxidizer outlet temperature and exhaust oxygen (every 15 minutes). These are used as parameters along with engineering calculations to demonstrate continued compliance with the required VOC destruction efficiency / outlet concentration.

COMMENT 65: Special Condition 18

VPBCC and SFRGV stated that Special Condition 18 is entirely inadequate. VPBCC and SFRGV stated Special Condition 18 allows a predictive emissions monitoring system (PEMS) and a continuous parameter monitoring system (CPMS) as alternatives to a continuous emissions monitoring system (CEMS) but does not identify the general type of monitoring that must be conducted. VPBCC and SFRGV expressed concerns with the accuracy of a PEMS or CPMS and stated that because both are typically less expensive than CEMS, Special Condition 18 effectively ensures that the Applicant will not install CEMS. VPBCC and SFRGV stated that the permit must require CEMS, but the public should be entitled to comment on the type of monitoring that will be used for demonstrating ongoing compliance.

RESPONSE 65:

Special Condition 18 provides that the Applicant must use one of three continuous emissions monitoring systems. Specifically, a continuous emission monitoring system (CEMS), predictive emissions monitoring system (PEMS), or a continuous parameter monitoring system (CPMS). Each continuous emission monitor is suitable for differing sources of emissions and differing types of pollutants. A CEMS is an instrument that continuously measures actual emissions levels from a stationary source. It measures directly the pollutant of concern or measures a surrogate pollutant for the pollutant of concern. NO_x and CO are usually directly measured with a CEMS. CO concentration is used as a surrogate for VOC from combustion sources because low levels of CO indicate complete combustion of VOC compounds.

PEMS is the total equipment necessary for the determination of a gas concentration or emission rate. The determination is made using process or control device operating parameter measurements and a conversion equation and a graph, or computer program to produce results in units of the applicable emission limitation or standard.

CPMS, also called parametric monitoring, measures a parameter or parameters that are key indicators of system performance. The parameter chosen is typically one which demonstrates the control device is working properly, such as temperature (VOC destruction), pressure (appropriate baghouse pressure), or flow rate monitoring (sufficient mixing to promote combustion / destruction of acid gases).

Continuous demonstration of compliance with emission limits and pollutant concentrations is required for this PSD permit. The Applicant does have the option to choose among these systems so long as it is demonstrated to meet the federal and state rules as indicated in Special Condition 18.

Continuous compliance with required VOC destruction efficiency from the thermal oxidizers is required via Special Condition No. 19 and compliance with emission limits (thermal oxidizer, flares, and all other authorized equipment) is required via Special Condition No. 1 and General Condition No. 8. Special Condition No. 24 also includes associated recordkeeping requirements to demonstrate compliance.

COMMENT 66: Special Conditions 21 and 22

VPBCC and SFRGV stated that Special Conditions 21 and 22 should include recordkeeping and reporting requirements to document compliance with MSS operations referenced in the conditions. In addition, VPBCC and SFRGV stated that the Applicant should be required, to the extent possible, to coordinate MSS operations with other major sources in the area.

RESPONSE 66:

Special Condition No. 24K requires recordkeeping of maintenance events, including those described in Special Condition Nos. 21 and 22. Regarding coordination with other major sources of emissions in the area, MSS activities associated with this permit were reviewed and determined to be protective of human health and welfare. When appropriate, background concentrations are added to the modeled project concentrations to account for other existing emission sources in the area surrounding the plant. Background concentrations are obtained from ambient air monitors and include emissions from other industries, population, and vehicles.

COMMENT 67: Maximum Allowable Emissions Rate Table (MAERT)

FJS Risk Scientists stated that it is unclear how TCEQ developed the MAERT because the TCEQ did not provide supporting calculations or references for the table. FJS Risk Scientists stated that it is impossible to ascertain the origin of these emissions rates, that the actual chemical make-up is unknown, and therefore, no toxicological

evaluation can be made. Marjorie Jacobs asked what is considered an unacceptable level of emissions for the pollutants proposed to be authorized.

RESPONSE 67:

As discussed in Response 54, the draft permit does not contain the entire application, supporting calculations, or the Executive Director's technical review of the application. In accordance with the TCAA, an air quality permit is required to be obtained prior to the construction of a new facility or modification of an existing facility that may emit air contaminants. *See* TCAA § 382.0518. In order to ensure the level of emissions from the proposed plant is protective of the environment and human health and welfare, the Executive Director's staff conducted a thorough review of this application to ensure it meets the requirements of all applicable state and federal standards. The proposed emission rates were conservatively calculated based on the maximum firing rate of the turbines. A draft permit has been developed according to the representations made in the permit application and applicable regulations. The draft permit includes a Maximum Allowable Emissions Rate Table (MAERT) that specifies the type and amount of emissions allowed. The permit holder must operate within the limits of the permit, including the emission limits as provided in the MAERT. The total emissions of air contaminants from any of the sources of emission must not exceed the values stated on the MAERT. 30 TAC § 116.115(b)(2)(F). Emissions of any pollutant not included on the MAERT is unauthorized.

The MAERT was developed based upon the emissions calculations as discussed above in Responses 26-32. Turbine manufacturers provide data showing the expected and maximum emissions of all pollutants based upon firing rate and loading, and that data is relied upon to select the pound per hour rates and average ton per year rates that are put into the MAERT (EPNs labeled Train x GT Driver z). Of course, part of the supporting data also shows that those hourly and annual rates comply with the required emission concentration limits for NO_x, CO, and VOC. Thermal oxidizer emission limits are calculated based on the expected quantity of acid gas, considering the highest anticipated concentration of each VOC species and applying the expected VOC destruction removal percent from the oxidation. Other pollutants from the oxidizer are calculated using a mass balance method for sulfur compounds and AP-42 Section 1.4-1 for PM. Emergency ("essential service") and fire pump diesel generator emissions were based on emission factors required for EPA Tier 3 emergency engines found in 40 CFR § 89.112 and the sulfur concentration limit of 15 ppm. Back up natural gas generator emissions were calculated using factors found in EPA's AP-42 Section 3.2, Natural Gas Reciprocating Engines. Condensate tank emissions were based on methods introduced in EPA's AP-42, Section 7.1, Liquid Storage Tanks, as calculated using EPA's TANKS 4.0 computer program. Fugitive emission calculations are discussed above in Response 29 and are based on numbers of components as used in oil and gas processing. Pigging emissions are based on volumes and characteristics of gas predicted to be vented.

COMMENT 68: Liquefaction Trains Maximum Allowable Emissions

FJS Risk Scientists stated there is not a correlation between the six liquefaction trains and the emission sources listed in the MAERT. FJS Risk Scientists further stated it is unclear what constitutes a liquefaction train and what constitutes its steps and component parts. FJS Risk Scientists stated that the MAERT is silent as to the number of turbines and expected emissions and questioned whether a synonym for turbine was being used. FJS Risk Scientists also asked where the turbines fit.

RESPONSE 68:

The facility is proposed to include six liquefaction trains. Emission sources associated with each liquefaction train are: a thermal oxidizer, two combustion turbines per train, ground flares, fugitive emissions, and ancillary emissions sources. Emissions from the turbines were determined by the manufacturer's data and by the EPA's Compilation of Air Pollutant Emission Factors found in the AP-42 Manual. Based on this data and the firing rate of the turbine, the expected emission rates of the pollutants were calculated and incorporated into the Maximum Allowable Emission Rates Table (MAERT).

A liquefaction train is a liquefied natural gas plant's purification and refrigeration facility. As the raw natural gas enters the facility, H₂S is removed and burned in the thermal oxidizer and converted to SO₂. In order for the purified natural gas to be transported, the gas must be condensed by refrigeration and chilled to at least -260° F to convert it to a liquid state. To accomplish the required refrigeration, it is necessary to use two refrigeration systems and to chill the natural gas in two steps. Two turbines provide the mechanical power necessary for each train. If maintenance is performed on the equipment, the hydrocarbons contained in the system must be flared prior to any maintenance activities being performed. The flared hydrocarbons are sent to the ground flare.

EPNs associated with each liquefaction train have the corresponding train number (1-6) appended. Each train has the following emission sources: a thermal oxidizer, generator turbine drivers A and B, and an essential service diesel generator. Turbine EPNs are those that begin with GT, which stands for Generator Turbine. Process units for each liquefaction train consist of an Acid Gas Removal Unit (AGRU), Dehydration Unit, Mercury Removal Unit, Natural Gas Liquid (NGL) extraction unit, and a Liquefaction Unit.

Within each train the AGRU will remove acid gas (H₂S and CO₂) from the incoming natural gas. The acid gas is then incinerated in a thermal oxidizer to convert H₂S to SO₂ and the products of combustion are subsequently released to the atmosphere. After AGRU treatment, a dehydration unit will then remove water from the natural gas first through cooling and then by means of dehydration beds. The dehydration beds will then be regenerated (or dried) by heated natural gas which is heated via a hot oil circuit. Next the Mercury Removal Unit removes trace amounts of elemental mercury via an adsorbent medium. Periodically, spent adsorbent will be removed and sent for regeneration and mercury recovery offsite. Finally, the natural gas will pass through

the NGL extraction unit which removes small amounts of heavy hydrocarbons. The two separation columns used for NGL extraction are heated via a hot oil circuit.

After these pre-treatment steps the natural gas is directed to the Liquefaction Unit. The natural gas is cooled and liquefied in two stages using two refrigeration cycles. The first cycle uses propane and the second cycle uses a mixture of nitrogen, methane, ethylene (or possibly ethane), and propane. The refrigerants are used in closed circuits and are not emitted to the atmosphere except during maintenance activities. During maintenance activities these refrigerants are directed to the flares for combustion. Two GE 7EA turbines are used as compressor drivers on each train for the refrigeration stages and are the primary sources of pollutants for this project.

In each train, the turbine driving the propane refrigeration cycle will have a Waste Heat Recovery Unit (WHRU) installed downstream. The WHRU will be used to heat oil in a closed-loop heating circuit, which is used to provide process heat to AGRU regeneration, Dehydration, NGL extraction, and high-pressure fuel gas heating. This results in the reduction of total project emissions of NO_x by 3%, CO by 4% and CO₂e by 9% from the initial proposal. After liquefaction, the natural gas is directed to one of four LNG tanks.

Monitoring

COMMENT 69: Monitoring and Reporting Requirements

Commenters expressed concern about the monitoring and reporting requirements of the proposed permit. Doug McKee expressed concern that the Applicant is not going to be monitoring HAPs and expressed concern that the term HAP includes 200 different compounds identified by the EPA. Marjorie Jacobs stated that there are 20 pollutants that will be emitted from the proposed plant, but that the TCEQ indicated only three will be monitored.

VPBCC and SFRGV stated that the draft permit does not include monitoring and reporting requirements sufficient to assure compliance. Specifically, VPBCC and SFRGV stated the draft permit lacks adequate continuous monitoring to assure compliance with the destruction efficiency, VOC outlet concentration, thermal oxidizers emission limits, and flare emission limits.

(VPBCC and SFRGV, Marjorie Jacobs, Doug McKee)

RESPONSE 69:

Monitoring and reporting requirements are found in the special conditions of the draft permit. Continuous monitoring of NO_x and CO emissions from the turbines is required by Special Condition No. 18, subject to the applicable requirements of the system chosen (CEMS, PEMS, or CPMS). Those types of systems are discussed further in Response 65. Note that continuous monitoring of CO emissions is used as a surrogate

for acceptable VOC emissions (because low CO indicates complete combustion, i.e., destruction of VOCs).

Special Condition No. 19 requires continuous monitoring of the thermal oxidizer outlet temperature and exhaust oxygen (every 15 minutes). These are used as parameters along with engineering calculations to demonstrate compliance with the required VOC destruction efficiency / outlet concentration.

Other sources and pollutants are required to demonstrate initial compliance with the rates in the MAERT during the Initial Determination of Compliance as discussed in Special Condition No. 17. This is also called stack testing. The stack testing must be performed according to EPA and TCEQ established procedures and methods, and must be coordinated with TCEQ Regional staff. Once this stack testing is performed, the results are sent to TCEQ and the EPA, and the Applicant is able to confirm that the representations (i.e., emission factors, flow rates, etc.) relied upon to predict quantities and types of emissions are correct. Knowing that the emission factors are correct, the Applicant can then use monitored values such as fuel usage to determine ongoing emissions and demonstrate ongoing compliance with the permit. Additional sampling may also be required by the TCEQ or EPA, as stated in Special Condition No. 17E.

Fuel usage and emission factors are used with engineering calculations to demonstrate ongoing compliance with PM/PM₁₀/PM_{2.5} emissions from the turbines as well as NO_x, CO, PM/PM₁₀/PM_{2.5}, and VOC emissions from diesel generators, seawater pumps, and backup natural gas generators. Sulfur fuel content and fuel usage are used with engineering calculations to show ongoing compliance with SO₂, H₂SO₄, H₂S limits for turbines and generators. A mass balance method for sulfur compounds is used to demonstrate compliance with these limits from the thermal oxidizer. Fugitive VOC limits, as noted in footnote 5 of the MAERT, are not tracked directly but compliance is shown by complying with special conditions such as those associated with the 28VHP LDAR conditions.

HAPs are not directly monitored at the facility level. However, HAPs are a subset of VOCs and VOCs are monitored. The only HAPs authorized to be emitted from the site are those that were represented by the Applicant and reviewed for acceptable health effects. See Response 8 for more information about the particular HAPs proposed to be authorized. As discussed above, CO CEMS serves as a surrogate to demonstrate ongoing VOC emission compliance from the turbines. The thermal oxidizer temperature and exhaust oxygen are the parameter used to demonstrate ongoing compliance. If VOCs are below permitted values, then HAPs will be below their permitted values as well.

Individuals are encouraged to report any concerns about nuisance issues or suspected noncompliance with terms of any permit or other environmental regulation by contacting the TCEQ Harlingen Regional Office at 956-430-6056 or by calling the 24-hour toll-free Environmental Complaints Hotline at 1-888-777-3186. If the plant is found to be out of compliance with the terms and conditions of the permit, it may be subject to possible enforcement action.

Citizen-collected evidence may be used in such an action. *See* 30 TAC § 70.4, Enforcement Action Using Information Provided by Private Individual, for details on gathering and reporting such evidence. Under the citizen-collected evidence program, individuals are providing information on possible violations of environmental law and the information can be used by the TCEQ to pursue enforcement. In this program, citizens can become involved and may eventually testify at a hearing or trial concerning the violation. For additional information, see the TCEQ publication, "Do You Want to Make an Environmental Complaint? Do You Have Information or Evidence"? This booklet is available in English and Spanish from the TCEQ Publications office at 512-239-0028 and may be downloaded from the agency website at the following link www.tceq.texas.gov (under Publications, search for Publication Number 278).

Compliance and Enforcement

COMMENT 70: Enforcement

Commenters expressed concern about the TCEQ's enforcement process. Jesse Miller stated TCEQ has not proven to be a reliable regulatory agency in enforcing violations. Additionally, Ms. Miller commented that the permit should be denied, and the TCEQ should halt all future permitting actions until the TCEQ evaluates and changes its enforcement standards. Marjorie Jacobs asked what procedures the TCEQ follows when a company is found to be in violation of its permit. Specifically, Ms. Jacobs asked whether the company receives a warning, a monetary fine, or if the company is forced to shut down the facility. Ms. Jacobs also asked how long it takes before enforcement actions are taken against the company.

(Sharron Almaguer, Scott Hagarty, Marjorie Jacobs, Jesse Miller)

RESPONSE 70:

There are a number of mechanisms by which the TCEQ monitors compliance with permit conditions and state and federal regulations. To the extent that personnel, time, and resources are available, the TCEQ investigates regulated operations to ensure compliance with applicable rules and regulations. Although specific to each site, investigations generally explore the entire operation of the plant. The investigation schedule may be increased if violations are found, violations are repeated, or if a regulated entity is classified as an unsatisfactory performer.

The TCEQ Regional Offices respond to complaints in a timely manner. However, the TCEQ Regional Offices prioritize their responses to complaints based on the potential for adverse health effects associated with the alleged violation. For example, a "priority one" complaint means serious health concerns exist, and that case will be investigated immediately. A "priority four" complaint, on the other hand, means no immediate health concerns exist; therefore, it will be investigated within 30 days. Staff from the TCEQ regional office reviews all complaints received and regional investigations are not limited by media. Complaints regarding regulated entities may be addressed to the

TCEQ Harlingen Regional Office at 956-425-6010 or by calling the 24-hour toll-free Environmental Complaints Hotline at 1-888-777-3186.

Alleged violations documented during an investigation are initially addressed through a notice of violation (NOV) letter, which generally allows the operator a specified period of time within which to comply. The violation is considered resolved upon timely corrective action. If a violation is not timely corrected, repeated, or causes an impact to the environment or neighboring properties, formal enforcement action will begin according to the TCEQ Enforcement Initiation Criteria. Depending on the situation, the commission has the authority to suspend or revoke a permit pursuant to the limitations in Tex. Water Code, Chapter 7, Subchapter G. As described in Response 13, citizen-collected evidence may also be used in an enforcement action.

Generally, administrative and civil penalties up to \$10,000 and \$50-25,000 respectively, may be assessed for violations of the TCEQ rules. *See TEX. WATER CODE Chapter 7.* However, the specific penalties associated with each violation are determined on a case by case basis according to the TCEQ's Penalty Policy. First, the commission will evaluate the penalty based on the size of the respondent's (i.e. alleged violator) site. For example, any stationary facility that has the potential to emit more than 100 tons per year of any air pollutant is classified as a "major source." Second, the "harm" is categorized as major, moderate, or minor, according to the "Environmental/Property and Human Health Matrix." The harm classification is based on whether an "actual" or "potential" release of contaminants occurred. Third, additional factors including compliance history, repeat violations, culpability, whether there was a good faith effort to comply with regulations, and other factors as justice may require will be assessed and will influence the overall amount of the penalty. In addition, any economic benefit or monetary gain derived from a failure to comply with TCEQ rules or regulations will be considered and may increase the penalty. The final penalty amount will be checked against the minimum and maximum penalty amounts authorized by statute, per day of violation, in order to obtain the final assessed penalty. Additional information about the TCEQ penalty policy may be obtained from the TCEQ website, and the Penalty Policy of the Texas Commission on Environmental Quality is available at the following link <http://www.tceq.texas.gov/publications/rg/rg-253.html>.

The TCEQ cannot deny a permit if the Applicant demonstrates that all applicable statutes, rules, and regulations will be met. Special conditions and a maximum allowable emission rates table are created to establish limits for the operation of the proposed plant. The permit conditions are developed such that a plant that is operated within the terms and conditions of the permit will operate in compliance with standards outlined in the TCAA and all applicable state and federal rules and regulations.

Water

COMMENT 71: Water Quality/ Water Use/ Water Permits

Water

Water Quality

Commenters expressed concern that construction and operation of the proposed plant would result in contamination of groundwater. In addition, commenters expressed concern that the proposed plant would contaminate waterways, which would affect the shrimping and fishing industries. Diane and Rick Teter expressed specific concern about water quality and the sensitive ecosystem of the Laguna Madre. Cereza Roxa is concerned about the potential to leak methane into the water supply from pipelines and drilling.

VPBCC and SFRGV stated the proposed plant will cause millions of tons of ballast water to be introduced into the waters around Brownsville. Further, VPBCC and SFRGV expressed concern that the application does not address whether this ballast water will contain contaminants that could impact the fish and shrimp populations. Specifically, VPBCC and SFRGV are concerned that the application does not state whether the VOCs that may be present in the ballast water could off-gas into the air.

(VPBCC and SFRGV, Group A, Patrick Anderson, Rolando Borrayo, Mary Craig, Josette Cruz, Mary Helen Flores, Edward Grigassy, Rebecca Hinojosa, Marjorie Jacobs, Lela Burnell Korab, Sandra Leal, Ava Leal, Melinda Melo, Dina Nunez, Robert Radnik, Shahn Reber, Cereza Roxa, Dianne Teter, Rick Teter, Joanna Ward)

Water Use and Availability

Commenters expressed concern about the amount of water the proposed plant will use. FJS Risk Scientists are concerned that the permit does not specify the amount and origin of any freshwater to be used at the proposed plant. Linda Moore stated the area is already stressed by over-use of water from the Rio Grande.

(FJS Risk Scientists, Lisa Lalumandier, Naila Macias, Linda Moore)

Water Permits

Diane and Rick Teter stated the air permit application should be considered in conjunction with any necessary water permits. In addition, Mr. and Ms. Teter asked that the air and water permits be co-joined for the Rio Grande LNG and Rio Bravo Pipeline facilities so that a total evaluation can be completed due to the fragile ecosystems of the area.

RESPONSE 71:

While the TCEQ is responsible for the environmental protection of all media, including water, the TCAA specifically addresses air-related issues. This permit, if issued, would regulate the control and abatement of air emissions only, and, therefore, issues regarding water use or water quality are not within the scope of this permit review. Accordingly, this air quality permit review did not include a specific water assessment or consideration of issues involving water quality.

Additionally, this permit does not authorize the discharge of pollution into a body of water and does not authorize effluent. Further, concerns regarding ballast water from ships is beyond the jurisdiction of the TCEQ. Individuals are encouraged to report environmental concerns, including water quality issues, or suspected noncompliance with the terms of any permit or other environmental regulation by contacting the TCEQ Harlingen Regional Office at 956-425-6010 or by calling the 24-hour toll free Environmental Complaints Hotline at 1-888-777-3186.

Waste

COMMENT 72: Waste

James Bryant and Yolanda Ferguson expressed concern that the proposed plant would become a Superfund site.

RESPONSE 72:

The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) allows EPA to clean up contaminated sites and forces potentially responsible parties to either perform cleanups or reimburse the government for EPA-led cleanup work. CERCLA is informally called Superfund. More information on Superfund can be found on the EPA website at <https://www.epa.gov/superfund/superfund-cercla-overview>.

This permit, if issued, would regulate the control and abatement of air emissions only, and therefore, issues regarding hazardous waste are not within the scope of this permit review. No waste is permitted to be discharged by the permit. However, the issuance of an air quality permit does not negate the responsibility of an applicant to apply for any additional required authorizations prior to operating a plant or from complying with other applicable regulations.

Local Impacts

COMMENT 73: Local Impacts/ Location

Location

Commenters expressed concern about the location of the proposed plant and its proximity to nearby communities, residents, schools, beaches, and other sites of special scenic, cultural, and historical value. Commenters also expressed concern about the safety of locating the proposed plant in the area due to the potential for tropical storms or hurricanes. The City of Port Isabel stated that the proposed plant will be located in or near the extra-territorial jurisdiction of the city and from property owned by the city and its component units, including public rights of way, parks, youth educational facilities to which the city contributes funds, the Artisan Apartment facility, the city's animal shelter, and the police training facility. The Town of Laguna Vista expressed concern that the plant is proposed to be located near residences, schools, recreational and cultural facilities, places of worship, and commercial facilities. In addition, The Town of Laguna Vista is concerned about the project being located on a salt flat along the Brownsville Ship Channel.

Several commenters are concerned that the proposed plant is located such that the prevailing winds put several downwind communities at risk. Commenters are specifically concerned about the communities of Port Isabel, South Padre Island, Laguna Vista, and Laguna Heights. Some commenters also expressed concern on the proximity to the Laguna Atascosa National Wildlife Refuge.

Commenters are concerned about the location of the proposed plant on the Texas coastline and stated that the Applicant should place the plant in a different area of the Texas coast or alongside existing terminals in the Houston area. Commenters stated that the south Texas coastline is one of the few natural places left in the state and asked that the TCEQ preserve the area. Several commenters stated that once lost, these beautiful places cannot be restored or recovered. Daniel Velez stated that other projects showcasing the beauty of the Rio Grande Valley should be considered, such as a public garden.

Several commenters stated they had grown-up in or vacationed in the area for years. Some commenters indicated that their families have lived in the area for generations. Commenters expressed concern about the future prospects for their families to continue to visit the area, especially for their children and grandchildren. Several commenters stated that they lived in or retired to this part of Texas to enjoy the scenery of the coastline and not to be exposed to industry. Sandra Leal expressed concern that the proposed project would destroy gravesites. The City of Port Isabel and The Town of Laguna Vista stated there are very sensitive receptors close to the proposed plant, including the presence of Native American artifacts.

(The City of Port Isabel, The Town of Laguna Vista, Save RGV from LNG, Group A, Sharron Almaguer, Rogelio Banda, William Beaty, William Berg, Rolando Borrayo,

Rosemary Breedlove, Catherine Brush, Nytaah Bunrell, Calvin R. Byrd, Bryan Cantu, Jim Chapman, Mary Helen Flores, Pearl Fry, Steven Garcia, Joyce Marie Hamilton, Cynthia Hammond, Mary Elizabeth Hollmann, Johvonne Howard, Marjorie Jacobs, Lela Burnell Korab, Lisa Kunin, Sandra Leal, Danielle Lopez, Naila Mancias, Sonia Martin, Kimberly Moreno, Marta Elena Pena, Juan Perez, Marianne Poythress, Robert Radnik, Carlo Robledo, Teresa Saldivar, Victoria A. Scharen, Mary Ann Marie Severson, Robert Gordon Severson, Laurel Steinberg, Dianne Teter, Rick Teter, Mirce Vargas, Armani Villarreal, Joanna Ward, Brad Willis, John Henry Young)

Lifestyle/ Aesthetics

Commenters expressed concern that the proposed plant would negatively impact the quality of life for the community and local residents. Commenters are also concerned that the beauty of the area will be impacted. Many commenters asked that TCEQ preserve Texas' beaches. Some commenters expressed concern about negative societal impacts on the community. Bryan Parras is concerned about the type of people that may be employed at the proposed plant and about associated industry types that would follow, such as bars, man-camps, and drug trafficking. Ava Leal expressed concern that the proposed plant would result in an increased amount of violent crime against women and children.

(City of Port Isabel, The Town of Laguna Vista, Group A, Sharron Almaguer, Rosemary Breedlove, Calvin R. Byrd, Sergio Contreras, Mary Helen Flores, Pearl Fry, Lela Burnell Korab, Sonia Martin, Dina Nunez, Juan Perez, Marianne Poythress, Teresa Saldivar, Victoria A. Scharen, Mary Ann Marie Severson, Robert Gordon Severson, Kathleen Sheldon, Nadine Smith, Daniel Velez, Joanna Ward, Brad Willis, John Henry Young)

Property Values / Tax Implications

Commenters expressed concern that the proposed plant will negatively affect their properties and property values in the surrounding area. Several commenters stated people were already considering selling their homes. Some commenters stated they were intending to buy property in the area but are now either reconsidering or not planning to purchase property due to the proposed plant. Additionally, commenters are concerned that the benefits to the local economy do not outweigh the risks posed by the proposed plant.

(Aaron, Sharron Almaguer, Patrick Anderson, Rosemary Breedlove, Mary Helen Flores, Steven Garcia, Johvonne Howard, Marjorie Jacobs, Danielle Lopez, Sonia Martin, Kimberly Moreno, Cereza Moxa, Dina Nunez, Sheila Patel, Marta Elena Pena, Juan Perez, Robert Radnik, Mary Ann Marie Severson, Robert Gordon Severson, Kathleen Sheldon, Dianne Teter, Rick Teter, Richard Tillotson, Joanna Ward)

Local Economy and Tourism / Aesthetics

Commenters expressed concern that the proposed plant will have a negative economic impact on their livelihoods. Commenters expressed specific concerns about negative impacts on: fishing and shrimping industries; boating; birding and other nature-related tourism; recreational businesses; and other businesses in the area that cater to tourists. Commenters asked the TCEQ to consider the economic benefits from tourism in the area when determining whether to approve the permit application. Commenters stated the number of jobs the proposed plant would bring to the area would be negligible when compared to the negative impact on tourism. In addition, some commenters expressed specific concern about impacts to eco-tourism, stating that visitors come to observe migratory birds, dolphins, and fish.

Commenters stated that the local economy depends on tourism, especially since the nearby community is primarily low-income. Commenters stated that many nearby residents work as cooks, fishermen, gardeners, housekeepers, servers, and cashiers, and that their financial stability is dependent on low-wage seasonal jobs that could be impacted by decreased tourism. In addition, commenters are concerned that emissions from the proposed plant will impact food growth, seagrasses, and marine life, which may in turn impact the local economy.

Debra Tietz stated no one will want to visit South Padre Island if they know that Texas puts a higher priority on oil. Sarah Merrill expressed concern about beach reconstruction expenses due to the construction and operations from the proposed plant. Sonia Martin stated the Rio Grande Valley is a retirement and birding paradise, and that people are already considering selling their homes.

Diane and Rick Teter stated that a cost-benefit analysis should be completed to assess impacts to local recreational and commercial fishing and shrimping industries to determine how jobs will be affected by the proposed plant's location. Mr. and Ms. Teter stated that this analysis should be done for the proposed plant individually, as well as cumulatively with other similar plants in the area. Mr. and Ms. Teter stated the analysis should determine how many work and school days will be lost due to health conditions caused by emissions from the proposed plant. Patrick Thomas Anderson stated that if the number of jobs created by the proposed plant is compared to the amount of emissions, he determined that the results are 51,760 tons of air emissions per employee.

(VPBCC and SFRGV, Group A, Rogelio Banda, William Beaty, Rolando Borrayo, Rosemary Breedlove, Catherine Brush, Calvin R. Byrd, Sergio Contreras, Josette Cruz, Steven Garcia, Raul Garza, Joyce Marie Hamilton, Joyce Hamilton, Johvonne Howard, Marjorie Jacobs, Lela Burnell Korab, Lisa Kunin, Ava Leal, Danielle Lopez, Naila Mancias, Sonia Martin, Kimberly Moreno, Dina Nunez, Bryan Parras, Juan Perez, Marianne Poythress, Louise Reavis, Jesus Rodriguez, Mary Ann Marie Severson, Robert Gordon Severson, Kathleen Sheldon, Laurel Steinberg, Dianne Teter, Rick Teter, Vivana Trevino, Gregory Vail, Joanna Ward, John Henry Young)

Traffic/Trucks/Ships

Commenters expressed concern about the increased truck and ocean tanker traffic that the proposed plant may generate. VPBCC and SFRGV stated the plant will bring more ship and truck traffic to the area, with 300-400 ocean tankers using the shipping channel every year. Laurice Dee stated that ship mishaps would be catastrophic for the dolphins and marine environment.

(VPBCC and SFRGV, Marjorie Jacobs, Lela Burnell Korab, Bryan Parras, Juan Perez, Kathleen Sheldon, Joanna Ward)

Noise and Light

Commenters expressed concern that noise and light pollution from the proposed plant would negatively affect the surrounding community and impact wildlife. The City of Port Isabel and The Town of Laguna Vista stated TCEQ should consider Title IV of the Federal Clean Air Act (FCAA), which addresses the potential adverse impacts of noise on humans and wildlife. The City and The Town are particularly concerned about noise impacts on threatened and endangered species.

(The City of Port Isabel, The Town of Laguna Vista, Mary Craig, Edward Grigassy)

RESPONSE 73:

The TCEQ's jurisdiction for air quality permitting is limited to the issues set forth in the TCAA Chapter 382. Accordingly, the TCEQ does not have authority to regulate or consider potential effects on land use, property values, the local economy, or tourism when determining whether to approve or deny a permit. In addition, the TCEQ does not have authority to enforce deed restrictions. Except under limited circumstances, which do not exist under this particular permit application, the issuance of a permit cannot be denied on the basis of plant location. As described in more detail in Response 6, both the TCAA and the TCEQ rules provide for an extensive review of the application to ensure that emissions from the proposed plant will not cause or contribute to an exceedance of the NAAQS or adversely affect human health or the environment. To the extent commenters requested additional analyses or economic cost-benefit studies, neither the TCAA or TCEQ rules require or provided for a review of such studies.

In addition, the TCEQ does not have jurisdiction to consider traffic or road safety when determining whether to approve or deny a permit application. Trucks and ships are considered mobile sources, which are not regulated by the TCEQ. Moreover, the TCEQ is prohibited from regulating roads per TCAA § 382.003(6), which excludes roads from the definition of "facility." Although the TCEQ is prohibited from regulating trucks, TCEQ rules prohibit anyone from causing a traffic hazard. Specifically, 30 TAC § 101.5 states, "No person shall discharge from any source whatsoever such quantities of air

contaminants, uncombined water, or other materials which cause or have a tendency to cause a traffic hazard or an interference with normal road use.”

Jurisdiction over traffic on public roads, including any load-bearing restrictions and public safety, including access, speed limits, and public roadway issues, are typically the responsibility of local, county, or other state agencies, such as the Texas Department of Transportation (TxDot) and the Texas Department of Public Safety (DPS). An air quality permit does not authorize a violation of any road safety or load-bearing restrictions. Concerns regarding roads should be addressed to appropriate state or local officials.

The TCEQ similarly does not have the authority to consider noise or light from a plant when determining whether to approve or deny a permit application. As such, the TCEQ does not have authority under the TCAA to require or enforce any noise abatement measures. Noise ordinances are normally enacted by cities or counties and enforced by local law enforcement authorities. Commenters should contact their local authorities with questions or complaints about noise. See Response 9 concerning endangered species.

COMMENT 74: Safety/Evacuation

Commenters are concerned about potential leaks and accidents at the proposed plant. Specifically, commenters are concerned about pipes leaking or rupturing and some commenters are concerned that natural gas leaks could result in flammable vapor clouds that could ignite. Save RGV from LNG stated that the Applicant referenced Sabine Pass LNG in its application, but that Sabine Pass has had recent safety issues and gas leaks. Accordingly, Save RGV from LNG stated that TCEQ should require a discussion of safety issues. Raul Garza stated the Applicant is known for having faulty equipment, which could result in higher emissions. Rolando Borrero stated the terminal will leak and asked why TCEQ would approve it when it will just be shut down later after purposely damaging the health of Cameron County citizens.

In addition, commenters expressed concern about safety and evacuation risks created by the location of the proposed plant, including specific concerns about the proposed plant's proximity to area communities and Space Exploration Technologies Corporation (Space X). Diane Teter and Rick Teter stated the proximity of the proposed plant's location to Space X could result in an accident due to the combustibility of the rocket or jet fuel combined with the emissions from the proposed plant. Mr. and Ms. Teter stated there should be a better process of combining the health and safety oversight of multiple agencies. Additionally, commenters stated that in the event of a life-threatening situation, only one bridge is available to evacuate South Padre Island, which commenters are concerned may also impact the ability of first responders to address an emergency situation.

Commenters are also concerned about the safety of locating the proposed plant along the Gulf Coast due to the potential for tropical storms and hurricanes. Commenters asked that the TCEQ take coastal storms, potential hurricanes, and subsequent

flooding into account. Save RGV from LNG stated that the TCEQ should require a discussion of these safety issues and any other issues at other LNG facilities over the past decade. Patricio Garza asked what the safety record was for other plants owned by the company.

(Save RGV from LNG, Emily Alpert, William Beaty, Roldando Borrayo, Eric Ehrmjan, Pearl Fry, Patricio Garza, Raul Garza, Rebecca Hinojosa, Joyce Marie Hamilton, Naila Mancias, Sonia Martin, Cereza Moxa, Bud See, Mary Ann Marie Severson, Robert Gordon Severson, Kathleen Sheldon, Joanna Ward)

RESPONSE 74:

As discussed in Response 73, the TCEQ does not have the authority to consider plant location or consider surrounding land use. Additionally, safety concerns at other plants is beyond the scope of this permit application. In certain circumstances, a permit application may require a TCEQ disaster review. Whether a permit application requires a disaster review depends on the chemicals handled, the location of plant, and the processes involved. Proposed projects which involve toxic chemicals that are known or suspected to have potential for life threatening effects upon off-site property in the event of a disaster and involve manufacturing processes that may contribute to the potential for disastrous events, are candidates for disaster review. This application did not require such a disaster review since operation of the plant will not include any of the specified toxic chemicals.

At the federal level, the proposed plant is subject to review and approval by the Federal Energy Regulatory Commission (FERC) pursuant to the Natural Gas Act and the National Environmental Policy Act (NEPA). The FERC review and approval process includes a comprehensive review of potential environmental and safety impacts during both construction and operation. This review will be documented in FERC's Environmental Impact Statement ("EIS"), which will address whether the proposed project meets all requirements of the NEPA. The EIS includes input from relevant agencies such as the Army Corp of Engineers, U.S. Fish and Wildlife, U.S. Department of Transportation, the Coast Guard, and the Environmental Protection Agency. Additionally, public participation opportunities are available during the FERC review process.¹¹

With respect to emissions events and MSS, as set forth in 30 TAC § 101.201(a), regulated entities are required to notify the TCEQ regional office within 24 hours of the discovery of releases into the air and in advance of maintenance activities that could or have resulted in emissions in excess of a reportable quantity. The reportable quantity varies based on the air contaminant released. In the event an individual is adversely impacted by air emissions from this or any other facility, they may register a

¹¹ Rio Grande LNG's FERC application is available online by searching "CP16-454" in the docket number search field at https://elibrary.ferc.gov/idmws/docket_search.asp. General information about FERC's LNG jurisdiction is available online at <https://www.ferc.gov/industries/gas/industry-act/lng.asp>.

complaint with the TCEQ Harlingen Regional Office at 956-425-6010 or by calling the 24-hour toll free Environmental Complaints Hotline at 1-888-777-3186. Complaints are addressed in accordance with TCEQ procedures. In the event of an emergency, the Local Emergency Planning Committee and the regulated entity have the primary responsibility of notifying potentially impacted parties regarding the situation.

As described in more detail in Response 6, both the TCAA and the TCEQ rules provide for an extensive review of the application to ensure that emissions from the proposed plant will not cause or contribute to an exceedance of the NAAQS or adversely affect human health or the environment. See Response 75 below for more information on unauthorized emissions.

COMMENT 75: Emissions Events/Spills

Commenters expressed concern that the draft permit and permit review does not address unauthorized emissions. Save RGV from LNG stated that the TCEQ should require a discussion of how the Applicant will mitigate against unauthorized emission events. VPBCC and SFRGV stated the draft permit does not include emissions from upsets or emergencies. As a result, the actual emissions from the proposed plant will be much more than what is currently represented. FJS Risk Scientists expressed concern that the draft permit only addresses normal operations and does not address upset or non-normal conditions.

(VPBCC and SFRGV, FJS Risk Scientists, Rogelio Banda, Rosemary Breedlove, Raul Garza, Rebecca Hinojosa, Lela Burnell Korab, Lisa Kunin, Ava Leal, Dr. Sarah Bishop Merrill, Kimberly Moreno, Cereza Roxa, Bud See, Dianne Teter, Rick Teter)

RESPONSE 75:

The draft permit's Maximum Allowable Emissions Rate Table (MAERT) lists the only emissions authorized to be emitted from the proposed facility. The TCEQ defines an upset event as an unplanned or unanticipated occurrence or excursion of a process or operation that results in an unauthorized emissions of air contaminants. An upset event that results in unauthorized emissions from an emission point is an emissions event. If an upset occurs, the permit holder must comply with the requirements in 30 TAC § 101.201 regarding the recording and reporting of emission events. If the permit holder fails to report in accordance with 30 TAC § 101.201, the commission may initiate enforcement action for failing to report the underlying emissions event itself. Additionally, an upset event does not exempt the plant from the prohibition against causing a nuisance found in 30 TAC § 101.4 or from compliance with opacity limits, as set forth in 30 TAC Chapter 111.

Individuals are encouraged to report any concerns about nuisance issues, upsets, or suspected noncompliance with terms of any permit or other environmental regulation by contacting the TCEQ Harlingen Regional Office at 956-425-6010 or by calling the twenty-four-hour toll-free Environmental Complaints Hotline at 1-888-777-3186. The TCEQ evaluates all complaints received. If the plant is found to be out of compliance

with the terms and conditions of the permit, it may be subject to possible enforcement action. Additionally, the general public can view the emissions event database on the TCEQ website at <http://www2.tceq.texas.gov/oce/eer/>.

Environmental Justice

COMMENT 76: Environmental Justice

Commenters are concerned about social degradation and the proposed plant's location near predominately Hispanic neighborhoods. In addition, commenters stated that the community is primarily low-income with many lacking health insurance and access to medical resources. Commenters stated authorizing the proposed plant is environmental racism and discrimination. Teresa Saldivar stated the surrounding region is around 90% Hispanic and she would guess the majority of the Applicant's management are Caucasian.

VPBCC and SFRGV stated the application and permit do not address environmental justice issues even though emissions from the proposed plant will disproportionately impact the nearby low-income and minority population. VPBCC and SFRGV states the permitting process for Jordan Cove Energy Project L.P., another LNG plant, included an environmental justice analyses. Specifically, Rio Grande LNG's application does not adequately address the environmental justice consequences of the proposed plant. In addition, VPBCC and SFRGV stated that the Spanish speakers were not provided with adequate public participation opportunities because the permit application, materials, and draft permit were not made available in Spanish. Ava Leal stated indigenous people feel like they have no voice in matters before the commission.

(VPBCC and SFRGV, Group A, Bryan Cantu, Josette Cruz, Pearl Fry, Cynthia Hammond, Mary Elizabeth Hollmann, Marjorie Jacobs, Brooke Kosar, Isidro Leal, Lance Lozano, Juan B. Mancias, Juan Mancias, Kimberly Moreno, Dina Nunez, Marta Elena Pena, Armani Villarreal)

RESPONSE 76:

The TCEQ is committed to protecting the health of the citizens of Texas and its environment. Air permits evaluated by the TCEQ are reviewed without reference to the socioeconomic or racial status of the surrounding community. However, discrimination on the basis of race, color, national origin, sex, or disability in the administration of our programs or activities is not allowed as required by federal and state laws and regulations. Although there are no TCEQ rules that specifically address environmental equity issues such as the location of permitted plants in areas with minority and low-income populations; the disparate exposures of pollutants on minority and low-income populations; or the disparate health, economic, and environmental effects on minority and low-income populations, the TCEQ has made a strong policy commitment to address environmental equity. The Office of the Chief Clerk works to help citizens and neighborhood groups participate in the regulatory process to ensure that agency programs that may affect human health or the environment operate without

discrimination and to make sure that citizens' concerns are considered thoroughly and are handled in a way that is fair to all. You may contact the Office of the Chief Clerk at 512-239-3300 for further information. More information on Environmental Equity may be found on the TCEQ website:

<https://www.tceq.texas.gov/agency/hearings/envequ.html>.

In accordance with 30 TAC § 38.405(h)(8), the Applicant was required to publish both notices in Spanish. Specifically, the first public notice for this application was published in Spanish, on June 22, 2016, and second public notice was published in Spanish on February 22, 2018, both in *El Nuevo Heraldo*. Further, as addressed above in Response 3, both of the public notices that were published in English included the statement "Si desea información en Español, puede llamar al 1-800-687-4040," which provides Spanish speakers with a telephone number to call for more information about the application.

Responsibility of TCEQ/Corporate Profits

COMMENT 77: Responsibility of the TCEQ/Corporate Profits

Commenters stated that the TCEQ has a legal and ethical responsibility to protect the community and natural resources from the dangers of the proposed plant.

Commenters stated that the TCEQ has a tarnished reputation and does not protect the state's human and natural resources consistent with its mission statement.

Commenters stated that the TCEQ needs to do their job by protecting the environment and the people from these types of industries and asked that the TCEQ consider the impact the proposed plant will have on future generations. Commenters asked that the TCEQ do what is morally right by the citizens of the state.

Commenters expressed concern that the TCEQ was regressing in its protectiveness and regulatory capacity. Scott Hagarty stated TCEQ needs to be tougher on industry in general and that the TCEQ issues far too few fines and rarely denies a permit. Betty Dunn commented that the TCEQ is becoming a false oversight entity that consistently sides with big-business polluters. Mary Helen Flores stated she doesn't know why it says environmental quality in TCEQ's name if TCEQ is not going to protect environmental quality.

Commenters stated that none of the proposed plant's corporate leaders live near the proposed plant, and therefore, will avoid any negative impacts directly to themselves or their loved ones. Commenters stated the TCEQ should consider whether they would approve of this proposed plant if they or their families had to live next to it.

(Save RGV from LNG, Sharron Almaguer, Patrick Anderson, William Berg, Nytah Bunrell, Josette Cruz, Mary Helen Flores, Pearl Fry, Raul Garza, Barbara Hill, Johvonne Howard, Timothy Jarvis, Ava Leal, Isidro Leal, Danielle Lopez, Lance Lozano, Juan Mancias, Cereza Moxa, Bryan Parras, Robert Radnik, Jesus Rodriguez, Jerry Ruiz, Nadine Smith, Dianne Teter, Rick Teter, Vivana Trevino, Joanna Ward, John Henry Young)

Commenters expressed concern that environmental damage may be allowed to occur all for corporate profit. Viviana Trevino stated it is appalling that TCEQ finds no issue in forcing people to live in and around pollutants for short-term profit. Janice Workman expressed concern that money and politics are considered more important than the health and lives of the local community. Commenters stated that the TCEQ needs to put the protection of the environment and the community ahead of corporate profits and monetary gain. Leah Horick stated the health of Texas residents should not be sacrificed for short-term economic gains. Robyn Reyna stated TCEQ was voted into its position to protect the state's resources, not to use them to line its pockets. Shawn Troxell stated that the TCEQ should not sell out to fossil fuel industries or other polluters. Isidro Leal stated that money from the proposed plant will be funneled to the top and provided to anybody who needs bribing. William Krause stated there is no need for this other than personal corruption.

(Gladys Alvizu, Laura Baguio, Elizabeth Bartlett, Nytah Bunrell, Bryan Cantu, Tierra Chapman, Bert Ebben, Suzanne El-Haj, Pearl Fry, Marina Hench, Karen Hillier, Marjorie Jacobs, William Krause, Lisa Kunin, Ava Leal, Isidro Leal, Juan Mancias, Dr. Sarah Bishop Merrill, Linda Moore, Ken Orgera, Marianne Poythress, Isom Ramsey, Cereza Roxa, Jerry Ruiz, Lance Setliff, Kathleen Sheldon, Vivana Trevino, Armani Villarreal, Joanna Ward)

RESPONSE 77:

The TCEQ's jurisdiction is established by the Legislature and is limited to the issues set forth in statute. Accordingly, the TCEQ reviews all applications consistent with applicable law and the TCEQ's regulatory authority and the Agency's mission to protect the State's human and natural resources consistent with sustainable economic development. If the proposed plant is operated as specified in the permit, the emissions from the facilities authorized by this permit should not adversely impact public health or the environment.

The mission statement of TCEQ is as follows: "The Texas Commission on Environmental Quality strives to protect our state's human and natural resources consistent with sustainable economic development. Our goal is clean air, clean water, and the safe management of waste." In this case, as in all permitting review cases, TCEQ will attempt to accomplish its mission by:

- basing its decisions on the law, common sense, good science, and fiscal responsibility;
- ensuring that regulations are necessary, effective, and current;
- applying regulations clearly and consistently;
- ensuring consistent, just, and timely enforcement when environmental laws are violated;

- ensuring meaningful public participation in the decision-making process;
- promoting and fostering voluntary compliance with environmental laws and providing flexibility in achieving environmental goals; and
- hiring, developing, and retaining a high-quality, diverse workforce.

The Executive Director has complied with this mission in reviewing this permit application. As explained in previous responses, the Executive Director's recommendation to issue the draft permit is based upon the authority and direction of the Texas Clean Air Act (TCAA). Specifically, TCAA § 382.0518 provides that the TCEQ shall issue the permit if an application demonstrates that the proposed facility will use at least BACT and there is no indication that the emissions from the facility will contravene the intent of the TCAA.

The TCEQ does not have jurisdiction to prohibit owners and operators from seeking authorization to emit air contaminants; nor can the TCEQ prohibit owners and operators from receiving authorization to emit air contaminants if they comply with all statutory and regulatory requirements. Further, the TCEQ is not authorized to consider a company's financial status or profit issues in determining whether or not a permit should be issued. The Executive Director's review of this application included an analysis of health impacts and the application of best available control technology (BACT), and based on this review, if operated in compliance with the terms and conditions of the permit, the proposed facility will comply with all applicable health effects guidelines and emission control requirements. Continued compliance with health effects guidelines and BACT requirements is expected if the company operates in compliance with the permit terms and conditions. Individuals are encouraged to report any environmental concerns at the facility by contacting the TCEQ Harlingen Regional Office at 956-425-6010 or by calling the 24-hour toll-free Environmental Complaints Hotline at 1-888-777-3186. The TCEQ evaluates all complaints received. If the plant is found to be out of compliance with the terms and conditions of the permit, it will be subject to possible enforcement action.

Additionally, the TCEQ has adopted a written ethics policy. The policy includes the requirements of TEX. GOV'T CODE § 572.051(a), which prohibit conduct that may improperly influence a state officer's official duties. Prohibited conduct includes accepting or soliciting a gift, favor or service that could influence the discharge of official duties; making personal investments that could create a substantial conflict of interest; or accepting a benefit for having exercised official duties. More information is available through Texas Ethics Commission Publication, *A Guide to Ethics Laws for State Officers and Employees*.¹²

¹² <https://www.ethics.state.tx.us/guides/Go-e.pdf> (revised September 15, 2015).

Public Support and Opposition

COMMENT 78: Public Support and Opposition

Commenters expressed their opposition to the proposed plant. Commenters stated that the communities located nearby the proposed plant have all taken a strong stance against the project and have passed resolutions to intervene and oppose the permitting of the proposed plant. Commenters stated that the TCEQ should consider the opinions and sentiment of the community when making permitting decisions and requested that the permit be denied.

(City of Port Isabel, Group A, Group B, Save RGV from LNG, Sharron Almaguer, Rogelio Banda, Rolando Borrayo, Rosemary Breedlove, Catherine Brush, Nytaah Bunrell, Nytaah Burnell, Calvin R. Byrd, Bryan Cantu, Jim Chapman, Josette Cruz, Mary Helen Flores, Raul Garza, Laurie Gaudi, Gloria Gonzalez, Leticia Guerra, Joyce Marie Hamilton, Barbara Hill, Rebecca Hinojosa, Mary Elizabeth Hollmann, Johvonne Howard, Marjorie Jacobs, Lisa Kunin, Sandra Leal, Isidro Leal, Danielle Lopez, Naila Mancias, Juan Mancias, Sonia Martin, Melinda Melo, Jesse Miller, Kimberly Moreno, Dina Nunez, Sheila Patel, Marianne Poythress, Robert Radnik, Louise Reavis, Shahn Reber, Carlo Robledo, Jerry Ruiz, Alejandra Sanchez, Victoria A. Scharen, Mary Ann Marie Severson, Robert Gordon Severson, Nadine Smith, Laurel Steinberg, Dianne Teter, Rick Teter, Richard Tillotson, Vivana Trevino, Daniel Velez, Armani Villarreal, Joanna Ward, Zoha Wazir, Brad Willis, John Henry Young)

Several commenters also expressed support for the proposed plant and support of the industry moving to the area and the jobs and income that it will bring to the region.

(Sergio Contreras, Tony Garcia, Patricio Garza, Roxanne M. Ray (CEO/President, South Padre Island Chamber of Commerce), Jesus Rodriguez)

RESPONSE 78:

The TCEQ appreciates the comments and interest from the public in environmental matters before the agency and acknowledges the comments in opposition of the project. The TCEQ cannot deny a permit if the Applicant demonstrates that all applicable statutes, rules, and regulations will be met. Special conditions and a maximum allowable emission rates table are created to establish limits for the operation of the facility. The permit conditions are developed such that a plant that is operated within the terms and conditions of the permit will be able to operate in compliance with standards outlined in the TCAA and applicable state and federal rules and regulations.

CHANGES MADE IN RESPONSE TO COMMENT

No changes to the draft permit have been made in response to public comment.

Respectfully submitted,

Texas Commission on Environmental Quality

Toby Baker, Executive Director

Margaret Ligarde, Deputy Director
Office of Legal Services

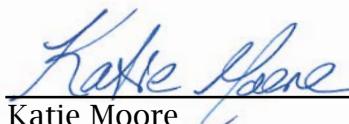
Robert Martinez, Division Director
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REPRESENTING THE
EXECUTIVE DIRECTOR OF THE
TEXAS COMMISSION ON
ENVIRONMENTAL QUALITY

Attachment A

The Office of Chief Clerk received comments from the following elected officials: Oliveira, René O. (Texas State Representative, District 37); Hockema, Jared (City Manager, City of Port Isabel); Howard, Johvonne (Laguna Vista City Councilmember); and Vela, Rolando (City Manager, Town of Laguna Vista).

The Office of Chief Clerk also received comments from the following persons: Aaron; Almaguer, Sharon; Anderson, Patrick Thomas; Banda, Rogelio; Barber, Joe; Beaty, William; Berg, William; Borrayo, Rolando; Breedlove, Rosemary; Brush, Catherine; Burnell, Nytaah; Byrd, Calvin R; Cantu, Bryan; Chapman, Jim (indicated his comments were on behalf of Save RGV from LNG); Chavez, Marlene; Collazo, Gloria J; Contreras, Sergio (on behalf of RGV Partnership); Cruz, Josette; Cuervo, Leonardo; Dominguez, Laura; El-Haj, Suzanne; Flores, Mary Helen; Forse, Linda; Fry, Pearl; Galasso, Maria; Garcia, Tony; Garcia, Patricia S; Garcia, Steven; Garza, Patricio; Garza, Raul; Gaudi, Laurie; Gonzalez, Gloria; Guerra, Leticia; Hamilton, Joyce Marie; Hammond, Cynthia; Hebert, Jackie; Hill, Barbara; Hinojosa, Rebekah; Hollmann, Mary Elizabeth; Irvine, Charles (on behalf of Save RGV from LNG and individual members Ed McBride, Flora Gunderson, Marianne Poythress, Edna Goette, and Caroline Ball (collectively referred to as Save RGV from LNG within the Response)); Jacobs, Marjorie; Jarvis, Mary (on behalf of FJS Risk Scientists, LLC); Jarvis, Timothy Thomas (both individually and on behalf of FJS Risk Scientists, LLC) ; Jarvis, Timothy; Korah, Lela Burnell (representing the Shrimpers and Fisherman of the RGV (SFRGV)); Krebs, Claire (on behalf of Vecinos Para el Bienstar de la Comunidad Costera and Shrimpers and Fisherman of the RGV (collectively referred to as VPBCC and SFRGV within the Response)); Kunin, Lisa; Leal, Sandra; Leal, Alma G; Leal, Ava; Leal, Isidro ; Lopez, Danielle; Lozano, Lance; Macias, Naila; Mancias, Juan B; Martin, Sonia; Martinez, Desi; McEvilly, Michael (on behalf of Save RGV from LNG and individual members Ed McBride, Flora Gunderson, Marianne Poythress, Edna Goette, and Caroline Ball (collectively referred to as Save RGV from LNG within the Response)); McKee, Douglas; Melo, Melinda; Miller, Jesse; Moreno, Kimberly; Moxa, Cereza; Nunez, Dina; Parras, Bryan; Patel, Sheila; Pena, Marta Elena; Perez, Juan; Poythress, Marianne; Radnik, Robert; Ray, Roxanne M (on behalf of the South Padre Island Chamber of Commerce); Reavis, Louise; Reber, Shahn; Robledo, Carla Ruby (on behalf of the Texas Master Naturalist); Rodriguez, Jesus; Roxa, Cereza; Ruiz, Jerry; Saldivar, Teresa R; Sanchez, Alejandra; Scharen, Victoria A; Severson, Mary Ann Marie; Severson, Robert Gordon; Sheldon, Kathleen; Smith, Nadine; Steinberg, Laurel; Teter, Diane; Teter, Rick; Tillotson, Richard; Trevino, Viviana; Vail, Gregory A (on behalf of Grand Delta Audubon); Vargas, Mirce; Velez, Daniel; Villarreal, Armani; Ward, Joanna; Wazir, Zoha; Willis, Brad; and Young, John Henry; Zummo, Rachel (on behalf of Vecinos Para el Bienstar de la Comunidad Costera and Shrimpers and Fisherman of the RGV (collectively referred to as VPBCC and SFRGV within the Response))

Group A

The Office of the Chief Clerk received identical comment letters from the following persons who will be identified in the responses as **Group A**:

Acevedo, Johnny; Acevedo, Noe; Adam, Mary; Adams, Evelyn; Adams, Fran; Agostini, Alberto; Ahlers, Richard; Aksoy, Darlene; Alamo, Carmen; Alaniz, Dahlinda; Alas, Chencho; Alexander, Marian; Alfeo, Anne; Alford, Carole; Ali, Genevieve; Alisau, Patricia; Allen, Melanie; Alles, Richard M.; Allison, Alexa; Allison, Joan; Allison, Rodger; Alpers, Benjamin; Altum, Angelika; Alvarado, Alexa; Alvarado, Cary; Alvarado, Greta; Alvarez, Melissa; Alvarez-Jett, Steve; Alvarez-Jett, Rachael; Ames, Gary; Andersen, Sarah; Anderson, Celina; Anderson, Charles P.; Anderson, Clyde; Anderson, Karen; Anderson, R. Michelle; Anderson, Teresa; Andres, Dixie; Andresen, Sherry; Andrus, Marlin; Angermeier, Sylvia; Anthony, Gail; Anzaldua, Robert; Armstrong, April; Armstrong, William; Ashraf, Rizwan; Askew, Pam; Atlas, Debra; Atlas, John; Atlmeyer, David; Atwood, Samuel; Avalos, Juan Eduardo; Avey, Carolyn; Ayala, Alayda; Babberney, Cameron; Bacon, Paula; Bacon, Scarlett; Bacon-Thieme, Rebecca; Bagalay, Julia; Baguio, Laura; Bailey, Arnold; Bailey, Claudette; Bailey, Jackie; Bailey, Jerry; Bailey, Jill; Bailey, Steven; Baker, Marion; Baker, Raynae; Baker-Sanchez, Taunyana; Balli, Rolando; Banks, Dana Murdoce; Banman, Deborah; Barnes, William; Barnett, Jessica; Baron, Neal; Barquin, Conchi; Barron, Virginia; Bartlett, Elizabeth; Barton, Gary; Barton, James; Basharat, Ghazala; Basiliere, Donna; Batchelor, S.; Bauer, Deborah; Baughman, Peter; Baughman, Sharon; Baum, Karen; Bautista, Justin; Beamon, Trina; Bean, Lawanna; Beard, Anne Marie; Beatty, Mandy; Beavers, James; Beckwith, Lillian; Beddow, Kevin; Bee, Bea; Beever, Susan; Behrendt, Lisa; Belcher, Benjamin; Belisle, Mavis; Bell, Benjamin; Bell, David; Bell, Gerald; Bellew, Lisa; Bence, Sharon; Bendio, Jennifer; Benefiel, M. E.; Benitez, Nohemi; Bennett, Amanda; Bennett, Tony; Benson, Lauren; Benson, Suzanne; Berens, Beth; Berg, Deena; Berger, Alicia; Berger, Linda; Bergmanson, Stefanie; Bernal, Lucy; Berry, David; Bertram, Matthew; Besley, Charles; Betancourt, Adrienne; Bethke, Linda; Betterton, Elaine; Betz, John; Beutel, Lilia; Beverly, Robert; Bigley, Kim; Bilby, Denise; Bilir, Lale; Bing, Donna; Birlin, Holly; Bizer, Marc; Bizzle, Wanda; Black, Julia; Black, Michael; Blackwell, Jocelyn; Blandford, Mark; Bludworth, Hope; Blueshtein, Moran; Boatman, Rebecca; Bodiker, Jennifer; Bodovsky, Greg; Boehmer, Andrew; Boelsche, Joyce; Boland, Donna; Boland, John; Bolestridge, Bobbye; Boltz, John; Boltz, Connie; Boneta, Jennifer; Bonner, Tracey; Bontempo, Darcy; Boon, Royce; Borden, Terrisue; Bosier, Justin; Bourdeau, Larry; Bowen, Diane; Bowling, Beth; Bowman, Judy; Box, Ken; Boxwell, Karen; Boydston, Carolyn; Braden, Al; Brady, Daniel; Brady, Les; Brainard, Craig; Bramblett, Sharon; Bramblett, Claud A; Braxton, Angelika; Bray, Debbie; Brazeau, Theodore; Breslau, Neil; Brighwell, Rachel; Brimage-Minkel, Carla; Britton, Shannon; Brod, Peggy; Brooks, Karl; Brown, Cindy; Brown, Duncan; Brown, Leigh; Brown, Lynn; Brown, Michael; Brown, Paul; Broyles, Elizabeth; Bruce, Debra; Brumby, Val; Brunette, Misty; Brunnemann, Savannah; Brunner, Chris; Brunner, Robbe; Bryant, Dawn; Bryant, James; Buchanan, Ivy; Budow, Danielle; Buehler, Lynn; Buescher, Michael; Burciaga, Julie; Burford, Martha; Burgen, Julia A.; Burger, Stephen; Burke, Alex; Burkhardt, Alice; Burnett, Buena; Burnett, David; Burnett, Kim; Burnett, Robin; Burns, Bill; Burns, Joyce; Burns, Kathryn; Burns, Lalie; Burr-Lonnon, Jacqueline;

Burrows, Donna; Burson, Sandra Chapman; Busey, Nancy; Bush, Claire; Bush, Cynthia; Bush, Julie; Bushnell, Laura; Bushnell, Susan; Bushong, Shannon; Butler, David; Butler, Morgan; Butler, Nancy; Byers, Scott; Byrne, Dave; C. A.; Caffee, Sarah; Cagle, Kim; Calderon, Edye; Caldwell, Kirsten; Calis, Ayhan; Calvert, Rae; Camarillo, Bran; Cameron, Brandon; Camp, Michelle; Campbell, David; Campbell, Kerry; Campbell, Patricia; Campbell, Sharon; Campion, Nancy Cooper; Campos, Emmet; Canan, Brandy; Canipe, Kara; Cannon, Susan; Canny, Brian; Cantu, Claudia; Cantu, Gloria; Cantu, Roel; Cantu, Yenneira; Caponi, Peter; Cardwell, Paul; Carey, Nicole; Carlson, Loni; Carpenter, Jeff; Carrasco, Ruben; Carrell, Cindy; Carter, J. Russell; Carter, Linda; Carter, Loretta; Casady, James; Casas, Cecilia; Casas, Christine; Casey, Eric; Casey, Joan; Cash, Donna; Castello, Sherry; Castro, Raul; Catala, Pierre; Cates, Cheryl; Cates, Jane; Cavanaugh, Daniel; Cero, Efra; Cervone, Katherine; Cespedes, Rosina; Chang, Pornsri; Chanin, Zoey; Chapman, Tierra; Chavez, Benito; Cheatham, Pamela; Chesser, Cathy; Chitty, Michael; Chong, Susie; Choquehuanca, Jeanne; Choquehuanca, Jose; Choquehuanca, Maria; Chovanec, Nora; Christensen, Morgan; Christian, Cinda; Christilles, Laura; Christopher, Annette; Christopherson, M. Diane; Chumley, Dianne; Cimino, Maryrose; Claiborn, Tom; Clark, Daisy; Clark, Joy; Clark, Paula; Clarke, Rita Wells; Clem, Lynne; Clemens, Steve; Clements, Bonnie; Clemons, Marlene; Clepper, Lindsey; Cline, Lois; Cline, Terry; Cludius, Martha; Cobb, William; Cochran, Jennifer; Coffman, David; Coldwell, Sherilyn; Cole, Lina E.; Coleman, Eva; Coleman, Tricia; Collins, Ruth; Colombo, Emma; Colvin, Benard; Colwell, Esther; Comins, Michael; Concerned Citizen; Conley, James; Converse, Camille; Cook, Steve; Cooke, James; Cooper, Brenda; Cooper, Sara; Copeland, Julia; Corbin, James; Cordova, Monica; Cornelius, Sandra; Cornforth, Katie; Coronado, Veronica; Cortez, Norma; Couch, Georgia; Covey, Mark; Cowan, Douglas; Cox, Jeralynn; Cox, Laura; Cox, Nonya; Craig, Elizabeth; Craig, Mary; Craig, Rodney; Crandall, Analisa; Creek, Nicole; Crenshaw, Gloria; Crenwelge, Leah; Croll, Robert; Crone, Gloria; Cross, Josh; Cruz, Ana; Cruz, Krystal; Cuba, Arnold; Cubeta, Katherine; Cueva, Norma; Cullen, Beth; Cupp, Debbie; Curtis, Connie; Curtis, Cynthia; Cywinski, Rachel; Dalton, Cathleen; Daly, Sharon; Danna, Debbie; Darby, Alice; Dark, Carol; Dartez, Carroll; Daum, Thomas; Davenport, Paul; Davenport, Tracy; Davidson, Mary; Davidson, Steve; Davis, April; Davis, Gene; Davis, John; Davis, Lindsey; Davis, Sam; Davis, Shonna R.; Day, Scott; De Angelis, Christine; De Los Santos, Drew; Dear, Sharon; Decamp, Joshua; Degriff, Rosanne; Dehaini, Mariam; Delagarza, Blanca; Delage, Carol; Delarosa, Omar; Delavan, Mary Jo; Deleon, Del; Deleon, Jose; Delgado, Mary; Delucia, Renae; Demarais, Jackie; Denbraber, Sandra; Denney, Karah; Densing, Lindsey; Derammelaere, Susan; Desousa, Sarah; Dezambrano, Sondra; Diatschenko, Anita; Diaz, Daniel; Diaz, Laurie; Dickerson, Mary; Dickson, Heidi; Dickson, Kristine; Diggory, Lori; Dobbins, Larry; Dobbs, Michael; Dobropolski, Elida; Dodson, David; Dolcater, David; Domenico, Astrid; Dominguez, Jose; Dominguez, Laura; Dominguez, Patricia; Donaldson, Sandra; Dorff, Jeffrey; Dowling, Christopher; Downs, Jan; Drake, Tasha; Dravis, Jeff; Driver, Stefanie; Drullard, Claire; Duda, Tim; Dudley, Keith; Duke, Sandra; Dula, Ronald; Dunaway, Michaela; Duncan, Sylvia; Dunlap, Sharon; Dunlap, Susana; Dunlap, Sydney; Dunn, Betty; Duppstadt, Eileen; Ead, Mitchell; Earl, Hillery; Earney, Michael; Eaton, Edna; Ebbin, Bert; Eberle, Heather; Eckert, Kilian; Edwards, John; Elam, Jack; Elkins, Jules; Elkins, Shannon; Elliott, Dottie; Elmer, Portia; Emmons, Kevin; Emmons, Samantha; Emshoff, Arthur; Endress, Daphne; Engel, Cindy; England, Courtney; England, Jan; Englander, Stephen;

Engleman, Howard Dodge; Erdhart, Donna; Erhart, Marty; Erickson, Erin; Esparza, Laura; Ethridge, Diane; Evans, James; Evans, Pam; Evenson, Elizabeth; Everest, Sequoia; Everist, Rita; Exparza, Brenda; Faires, Charles; Falcon, Maureen; Faris, Aaron; Faulk, Don; Faulk, Joyce; Faulkner, Anita; Felberg, Denise; Ferguson, Yolanda; Ferlet, Tracy; Fernandez, Fred I.; Ferrer, Emerald; Fickling, Sarah; Fielder, L.; Fierro, Yvonne; Figueroa, Carmen; Finos, Stephen; Fischer, Jennifer; Fisher, Julie; Fisher, Melissa; Fissel, Jeffrey; Fitzgerald, Joseph; Fitzharris, Susan; Flanagan, James; Flax, Freda; Fletcher, Barbara; Flocco-Mcmaster, Kathy; Flora, Linda; Flores, Beatriss; Flores, Rafael; Flores, Susan; Flummer, Debra; Fly, Carol; Fly, Guenther; Fly, J.; Fly, N; Foley, Patricia; Fonseca, Jacqueline Michelle; Fonseca, Vincent; Fontenot, Brandy; Fontenot, Dawne; Forbes, William; Foreman, Charles; Forsha, Jeri; Forster, Olka; Fortenberry, Andrews; Fossing, Melony; Foster, Elaine; Foust, Jamie; Fowler, Barbara; Fowler, Elaina; Fowler, Gyla; Fox, Christopher; Fraley, Tamara J.; Francis, James; Francis, Stacey; Franck, Charles; Franczek, Leah; Frank, Sharon; Frankel, Linda; Franklin, Roy; Franks, Jeff; Frankum, Ray; Frederiksen, Allan J.; Freeman, Antoinette; Freeman, Linda; Friedman, Ann; Fruth, Roman; Fukuchi, Cori; Fuller, Sandy; Fullerton, Nancy; Fulton, Tim; Fults, Sandra; Fuqua, Chad; Fusinato, Robert; Gabriel, Sue; Gaby, Doris; Gagon, Charlene; Gaines, Paul; Galbraith, Alexandre; Galindo, Jim; Galindo, Sally; Gallegos, Felix; Gallegos, Nancy; Galloway, Deborah; Galvan, Christina; Gannaway, Gloria; Garcia, Antonio; Garcia, Elizabeth; Garcia, Jonathan; Garcia, Linda; Garcia, Martha; Garcia, Minerva; Garcia, Reyes; Garcia, Shirley; Garcia-Escobedo, Melissa; Garland, Steve; Garrett, Tina; Garrison, Jennifer; Garrison, Kelly; Gary, Robert; Garza, Anna; Garza, Liz; Garza, Margaret; Garza, Marinela; Garza, Patricia; Garza, Robin; Garza, Rolando; Garza, Stephanie; Garza, Tanya; Gates, Nancy; Gauna, Matt; Gavilanes, Diego; Gelbart, Susannah; Gensor, Eda; George, Kim Sanders; Germain, Maureen; German, Melynda; Gessley, Margaret; Gibson, Melanie; Giddings, Erin; Gilbert, Miles; Gilbert, William; Giles, Al; Gilliland, Robert; Gilmore, Cameron; Goad, Dawn; Gollman, Barbara; Golub, Joyce; Gomez, Eres; Gomez, Linda; Gonyo, Rick; Gonzalez, Alberto; Gonzalez, Ana; Gonzalez, Jacqueline; Gonzalez, John; Gonzalez, Jose; Gonzalez, Mary; Gonzalez, Mattie; Gonzalez, Nikki; Gonzalez, Raul; Gonzalez, Roberto; Gonzalez, Rosa; Gonzalez, Ruben; Gonzalez, Stefany Garza; Goode-Deblanc, Emma; Gooden, Jacqueline; Goodfriend, Sarah; Goodloe, Brandon; Goodman, Mark; Goodwin, Diane; Goodykoontz, Deborah; Gorak, Martha; Gorman, Holly; Gorman, Lavina; Graeber, Heather; Graves, Jeanne; Gray, Michael; Green, Natasha; Green, Roger; Greene, Sheri; Gregg, Michael; Grevel, Laura; Grewal, Sukhbir; Griffin-Campbell, Candace; Grigassy, Edward; Grimaldo, Elizabeth; Grimes, Jim; Grimm, Carol; Gromoll, Shirl; Groote, Nicole; Groshardt, Joanne; Gross, Betty; Grove, Barbara; Gryting, Kimberly; Guajardo, Genesis; Guaraldi, Thomas; Guerra, Rafael; Guerrero, Maria; Guh, H.; Guldi, Richard L.; Guthrie, Tristen; Gutierrez, Hilda; Gutierrez, Karla; Gutierrez, Linda; Gutierrez, Sylvia L.; Guy, Victoria; Guzman, Marco; H., Currie; Haby, Lauren; Hackett, Kathleen; Hadad, Oscar; Hagarty, Scott; Haggard, Paul; Hahus, Donna; Halback, Matt; Halback, Tom; Halbert, Jerry; Haley, Victoria; Hall, Joy; Hall, Rebecca; Halley, David; Hamilton, Karen; Hamilton, Lisa; Hamilton, Lois; Hammack, Debora; Hammett, Hank; Hammons, Victoria; Hancock, Peter; Hansen, Debra; Hansen, M. J.; Harlan, Jennifer; Harmon, Lucy; Harmon, Susan; Harms, Caroline; Harris, Shirlene; Harrison, Dan; Harrison, Mark; Hart, Michael; Hartley-Oldham, Mary; Hartman, S.; Harvey, Erin; Harvey, Richard; Hassis, Carolyn; Hatch, Jeff; Hathaway, Christopher;

Hawkins, Candice; Hayden, Lindsey; Hayek, Michel; Hayes, Natalie; Hazur, Catherine; Hazzard, Cathy; Healey, Debra; Heare, Lorna; Hebley, Sandi; Heckman-Sauer, Barbara; Heiman, Maury; Helibronner, Christi; Helms, John; Helwig, Vanessa; Hembree, Donna Robyn; Hemingway, Britlin; Hench, Marina; Hendee, Elizabeth; Hendrickson, Jacob; Hensley, Rene; Hernandez, Brenda; Hernandez, Diana; Hernandez, Jenina; Hernandez, Liana; Hernandez, Melinda; Hernandez, Rosemary; Herrmann, Marianne; Hersum, Marian; Hersum, Terry; Herzberg, Jessenia; Hettleman, Susan; Hewes, Robert; Heyden, Donnie; Hickox, Gilbert; Hild, Gary; Hill, John; Hill, Roberta; Hill, Sharon; Hill, Terry; Hill, Thomas; Hillier, Karen; Himelright, Ginger; Hinds, Chesley; Hinojosa, Alejandra; Hirschi, John; Hitchcock, Erik; Hoard, M.; Hobbs, Elaine; Hobbs, George; Hobbs, Kelly; Hochstatter, Ryan; Hoegler, Lois; Hoffman, Anne; Hoffman, Jane; Hogg, Cheryl Bowers; Holcomb, Stacy; Holden, Gaye; Holland, Virginia; Holleschau, Karen; Holliday, William; Hollis, James; Holmgreen, George; Holt, Bill; Holubec, Edye; Hooten, Nancy; Hoover, John; Hoover, Ann; Hopkins, Angela; Horick, Leah; Horsley, Julie; Horsley, Paul; Horstman, Steve; House, Heather; Houston Li, Leon; Howard, Colin; Howes, Richard; Hudson, Adam; Huff, Darren; Huff, John R.; Huffaker, James; Huggins, Jolynn; Hughes, Lisa; Hughey, Rick; Hummel, Julia; Hummel, Kenneth; Hunt, George; Hunt, Marilyn; Hunt, Paula; Hunter, Ann; Hunter, Kylara; Hurtado, Zachary; Hutcheson, Garrett; Hutchings, Lee; Hutchins, Linda; Ianman, David; Immel, Nicolette; Inglis, Adrienne; Ingraham, E.; Innis, Grace; Ioera, Ann; Irby, Gloria; Irwin, Sarah; Iturrino, Christine; Iverson, J.; Ivey, Jean; Jack, Del; Jackson, Craig; Jackson, David; Jacobs, Shawnda; Jaroma, John H.; Jarratt, Fran; Jasmin, Lynn; Jatinen, Jane; Jaudzemis, Kathleen; Jeffrey, Pati; Jenicek, John; Jernigan, Larry; Jevric, Virginia; Jew, Catherine; Jinks, Timothy; Johnson, Allison; Johnson, Christina; Johnson, Garry; Johnson, Jennifer; Johnson, Josephine; Johnson, Julie; Johnson, Kalista; Johnson, Kathryn; Johnson, Matthew; Johnson, Mike; Johnson, R. M.; Johnson, Robert; Johnstone, Kent; Jones, Brooke; Jones, Mallory; Jones, Patty; Jones, Tasha; Jones, Texacala; Jordan, Charlene; Jordan, Jillian; Jordan, Mel; Juett, Gwynne; Justice, Bruce; Kahn, Molly; Kalister, D.; Kantor, Julie; Karnes, Lisa; Katusak, Connie; Kavanagh, Kate; Kawszan, Karen; Kaye, Mady; Kearney, Vivian; Kelley, Nanette; Kellman, Steven G.; Kelly, Lynn; Kelly, Shana; Kemp, Kristin; Kenney, Claire; Kettrick, Adriana; Khalaf, Nadia; Kidd, Janice; Kiger, Nick; Kim, Seon; Kim, Young; King, Christen; King, David; Kinser, Kevin; Kinser, Shea; Kirk, Deanna Pena; Kirkpatrick, Gabe; Klugiewicz, Mark; Knabeschuh, Susan; Knight, Catherine; Knotts, Sheryl; Kobernat, Steven; Koperwhats, Martha; Koppel, David; Koshy, Jennifer; Kostrova, Tatyana; Krause, William; Krausse, Mairi; Krone, Robert; Kruschwitz, Vicki; Kubasek, Julie; Kuchar, William; Kuehner, Steve; Kuhrt, Linda; Kunkel, David; Kunkler, Tracey; Kurtnick, Mary; Kyse, Barbara; L., Georgia; L., Spencer; Labuga, Earl; Ladig, Debbie; Lafour, Liz; Lalumandier, Lisa; Lambert, Janet; Landwert, Janet; Lanedava, Dava; Lang, Linda; Langford, Charles; Langley, Wayne; Lanier, Sondra; Larsen, Louise; Lassberg, Colette; Laukoter, Peter; Lavender, Barbara; Lawley, Kelly; Lawrence, Jaen; Layaud-Boulat, Ramiz; Le Messurier, Philip; Leach, Stephen; Leal, Stephanie; Lee, Amaya; Lee, Amy; Lee, Jason; Lee, Niki; Lee, Tom; Lefler, Susan; Lemieux, Richard; Lennon, Sarah; Leon, Mary; Leonard, Chelsea; Leonard, Gabrielle; Leonard, Jacen; Leos, Martha; Lepkowski, Lindsay; Leutsch, Johnelle; Levine, Joyce; Lewis, Alexandra; Lewis, Jamie; Lewis, John; Lewis, Kristin; Lezak, Jennifer; Li, Stacy; Liedtka, Denise; Lillie, Kat; Lindholm, Sarah; Lindow, Amy; Lindsey, Lee; Lionetti, Marc; Livingston, Marilyn;

Locasio, Ann; Lock, Deanne; Locke, Stacey; Lockhart, Bill; Logan, T.; Lois-Borzi, Ana; Long, Kevin; Long, Sue; Lonzetta, Mike; Lopez, Daniel; Lopez, Diana; Lopez, Dicia; Lopez, Franco Baca; Lopez, Norma; Lopez-Barbosa, Nidia; Lott, Deborah; Louvel, Tomas; Lovelace, George; Lowry, Lois; Lozano, Donna; Lubensky, Teresa; Lucas, Janet; Lundquist, Jane; Lunt, Rhonda; Luxton, Tammy; Lyall, Andrew; Lyons, Earl Keith; Lytle, Charles; Mabry, Amber; Machle, Mary Lou; Macias, Michael; MacNeil, Kate; MacPhail, Jack; Madole, Richard; Maher, Maggie; Majumdar, Sarmistha; Malik, Scott; Malina, Eva A; Malone, Cary; Manescu, Larisa; Mann, Robert; Mannchen, Brandt; Manske, Amber; Manuel, Anna; Marakowitz, Jerry; Marbley, Faye; Marek, Becky; Margos, J. F.; Marquess, Keith; Marren, Kevin; Marshall, Laurie; Marshall, Rebecca; Marshall, Ron; Martin, Nancy; Martin, Patricia; Martin, Sarah; Martinez, Armando; Martinez, Daniel; Martinez, Gavin; Martinez, Lydia; Martinez, Natalie; Martinez, Vanessa; Masino, Amanda; Maslonka, Teresa; Mason, David; Massey, Kathleen; Matheson, Neill; Matthews, Karen; Matthis, Rose; Matula, Kathleen; Matusoff, Cathy; Maurer, William; Maxwell, Tracy; May, Margaret; Mayes, Evan; McBrayer, Kay; McBride, Emma; McCabe, Thomas; McClelen, Christopher; McCollam, Clare; McConnon, Rosemary; McCoy, John; McCulley, Michelle; McCutchon, Fred; McDaniel, Niki; McDevitt, Susan; McDill, George; McDonald, Mary; McDougal, Sue; McDugald, Betty; McGaffey, Barbara; McGary, Dorothy; McGee, Ashley; McGlothlin, Rebecca; McGonigle, Lisa; McGrath, Collin; McKay, Claire; McKee, Eileen; McKeen, Daniel; McKeown, Mavis; McKim, Mark; Morris, Laura; McMullen, Adrienne; McNellie, Roger; McRaven, Alena; Meador, Nancy; Meador, Joel; Medina, Feli; Medina, Jesse O.; Meduna, August; Melendez, Daniel; Mellina, Sandy; Menard, Vic; Mendieta, Ezequiel; Meneguzzo, Dawne; Meola, Leah; Merrill, Rebecca; Merrill, Sarah Bishop; Meza, Griselda; Michael, William; Michalek, David; Mick, Robert; Mierzwa, Donna; Miler, Tom; Miles, Toni; Miller, Bruce; Miller, Daniel; Miller, Lillian; Miller, Mary E; Miller, Pamela; Miller, Todd; Millican, Catherine; Mills, Nancy; Millspaugh, Patty; Minnich, Dennis; Miranda-Makany, Zayda; Misak, Kevin; Mistrot, Diane; Mitchell, Crystal; Mladenka, Martin; Mock, Shirley; Moffett, Douglas; Mohamed, Lazaro; Mohr, Denise; Mohring, Kristine; Molina, Lionel; Molina, Roberto; Moltenberry, Teresa; Monroe, Jayna; Montalvo, Homero; Montemayor, Alan; Montemayor, Delilah; Montes, Denise; Moore, Anne; Moore, Gary; Moore, Jane; Moore, Jessica; Moore, Linda; Moorman, Inge; Morales, Daniela; Morales, Gloria; Morehead, Paula; Moreno, Gabriela; Morey, Roy; Morgan, Jeff; Morgan, Myron; Morgan, Norma; Morgenstern, Bill; Morris, Debra; Morris, Elizabeth; Morris, Judith; Morris, Katie; Morris, Mary; Morris, Tracy; Morrisey, Jerry; Morrison, Sharon; Motta, Cesar; Mouser, Marva; Moyed, Karole; Muguerza, Michael; Mulcihy, David; Munguia, Sara; Munoz, Melina; Murillo, Brenda; Musel, Delfina; Musel, James; Musel-Gregory, Eileen; Musgrove, Tracy; Myers, Susan; Mylius, Jerry; Naghavi, Sahand; Najimi, M. J.; Nakakihara, Karen; Nakamizo, Kyoko; Nash, Ray; Neal, Caitlin; Neal, Carter; Neal, Gwen; Neal, James A; Neef, Christine; Neely, James; Nehmer, Luciana; Neily, Ryan; Nelson, Phil; Neufeld, Justin; Neumann, Roger; Neuneker, Rona; Neville, Arlilia; Newcomb, Billye; Newlin, Jamespaul; Newman, Kathy B.; Newsom, Sylvia; Newsome, Laquette; Ngo, Thinh; Nicholls, Veronica; Nichols, Susan; Nichols, William; Nicholson, Alice; Nicol, Scott; Niecamp, Joseph; Nieland, Carolyn; Nieland, Thomas; Nirgudkar, Prasanna; Nissen, Brad; Nojeim, Consuelo; Nolan, George; Nolff, Louise; Noll, Cecelia; Nongbri, Janet; Norris, Julie; Northcutt, Alan; Northen, Jim; Northrop, Emily; Norton, Karen; Novell, Laura; Nover, Mark; Nowell, Anita Cannata; Nowlin, Jess;

Nunez, Santino; O., Nancy; O'Bryan, Charles; O'Connor, Angelita; O'Connor, Patrick; O'Day, Lindsay; Odear, Elizabeth; Odell, Evan; O'Donoghue, Clive; O'Flaherty, James; Ohsie, William; O'Keffe, David; Okulewicz, Katherine; Okwumabua, Verena; Oliva, M.; Olivier, Rachel; Olsaver, Gary; Olsen, Peter; Olson, Katherine; Oppenheim, Jennifer; O'Quinn, Blake; Orgera, Ken; Orr, David; Ortega, Robert; Ortiz, Ben; Ortiz, Carol; Osborn, Cynthia; Ossian, Eleanor; Osuna, Paula; Otstott, Cathy; Ouderkirk, Rose; Overton, Joyce; P., Grace; Paciurea, Roxana; Padgett, Elisabeth; Page, Sarah; Palacios, Maria E.; Palmer, Marjorie; Pancake, Amy; Panchangnula, Bharadwaj; Paradis, Thomas; Paredes, Leticia; Parham, Jan; Paris, Dave; Parker, Clyde; Parker, Craig; Parker, Elizabeth; Parker, Jessica; Parkhill, Margaret; Parkhill, Margaret; Parma, Patrice; Partridge, Gary; Pascoe, Susan; Patino, Brittany; Patino, Michelle; Patterson, A.; Patterson, Deborah; Pawless, Melissa; Payne, Arthur; Payne, Lynn; Payton, Mary; Pearl, Elizabeth; Pearson, Rick; Pebworth, Evelyn; Perez, Alice; Perez, Amparo; Perez, Jillian; Perez, Rebeca; Perez, Vicki; Perry, James; Perry, Robert; Peterson, Joan; Petri, Sharman; Phan, Bernard; Phillips, Deana; Phipps, Michael; Pierce, Hillary; Piersol, Laurel; Pinckney, Kathy; Pitt, Jon; Pittman, Cassey; Plant, Chaz; Plata, Lourdes; Pollard, Stephen; Pollinzi, Rebecca; Porterfield, Kelly; Prabhakar, Anil; Prevost, Christine; Price, Karen; Pruett, Robert; Putman, Annalee; Quennoz, Michael; Quereau, Tobin; Queripel, Maximilian; Quesada, Ana; Quick, Sheryl; Quirk, Brian; Rabensburg, Nancy; Radke, Charles; Rambow, Rosemary; Ramirez, Adriana; Ramirez, Eduardo; Ramirez, Shanna; Ramirez, Simon; Ramos, Rosabel; Ramsey, Isom Kelly; Randolph, J. N.; Rasbury, Don; Raschke, Carol; Raymundo, Monica; Reed, Taylor; Reeves, R. C.; Regen, Donna; Reid, Kelli; Reid, Ruth; Reinlasoder, Diane; Rembold, Venice; Reyes, Tiffanee; Reyna, Robyn; Reynolds, Joseph; Reynolds, Rebecca; Rhein, Herman; Rhodes, Frank; Rice, Dana; Ricer, N. Dean; Rich, Pamela; Richards, Ashe; Richards, Donna K.; Richards, Wayne; Richardson, Glenn; Richerson, Monica; Richey, Sharon; Riddle, Carolyn; Riggs, Linda-Beth; Riker, Holly; Rinker, Jennifer; Rios, Eduardo; Rivas, Criselda; Robbins, Jennifer; Roberson, Pat; Roberts, Clayton; Roberts, J.; Robertson, Debra; Robertson, Kathleen; Robinson, Charlotte; Robinson, Jay; Robinson, Peggy; Robinson, Simon; Robison, Nancy; Robledo, Gabriel; Robles, Doraelia; Rodarte, Montserrat; Roden-Forman, Leslie; Rodriguez, Angel; Rodriguez, Belkys; Rodriguez, Charles; Rodriguez, Fidelia; Rodriguez, Irma; Rodriguez, Juan; Rodriguez, Mariela; Rodriguez, Melissa; Rodriguez, Miguel; Rodriguez, Raul; Rodriguez, Susan; Rodriguez, Terra; Rogers, Dirk; Rojas, Ricardo; Rolfs, Kay; Rolfs, Kevin; Rollins, Trish; Romero-Piche, Maria; Romfh, Pete; Romfh, Peggy; Romo, Jacqueline; Roof, Lisa; Ropple, Jackie; Rosales, Maria; Rosales, V.; Rose, Mary Sue; Rose, Phillip; Rose, Ray; Rosnberg, Nancy; Ross, Bruce; Ross, Paul; Roth, Brian; Rovira, Bill; Rowe, Michael; Rowell, Tiffany; Rudesal, Rosemerry; Rudolph, Linda; Ruggia, Ellen; Rusk, Zach; Russell, Jamie; Russell, Pamela; Russell, Wade; Russo, Jane; Russo, John; Russo, Laura; Rust, Thomas; Sadegh, Judith; Saenz, Emily; Sage, Will; Sager, Ann Marie; Salas, Brenda; Salih, Sharon; Salinas, Alison; Salinas, Ana; Salinas, Jasmin; Salinas, Patricia; Salinas, Salinas, Rosendo; Salmon, Candice; Saltmarsh, Sara; Sanchez, Allie; Sanchez, Diana; Sanchez, Elaine; Sanchez, Melissa; Sander, Carol M.; Sanders, Peggy; Sankovich, Kristin; Sappington, Tom; Sariol, Teresa; Sasser, Sherry; Sather, Frank; Saucedo, Alberto; Saviano, Brittany; Saxena, Somyata; Saxon, Pat; Scarbrough, Shelby; Schexnayder, Emily; Schexnayder, Patrice; Schieferstein, Susan; Schill, Brian; Schmidt, Amy; Schneider, Debra; Schonberger, Arne; Schrade, James; Schroeder, Briana;

Schuerman Choi, Becky; Schulenberg, Catherine; Schulenberg, Margaret; Schuler, Eugenia; Schulte, Hollis; Schultz, Ginger; Schwartz, Georgina; Schwausch, Stephen; Schyma, Spencer; Scott, Dorinda; Scott, K.; See, Bud; Seerden, Pam; Seff, Joshua; Segura, Desiree; Sells, Greg; Sepulveda, Kimberly; Serrano, Richard; Setliff, Lance; Seward, Susan; Sexton, Mary; Sexton, Sara; Shabot, Linda; Shaffer, Tria; Shah, Binal; Sharpe, Libby; Shaw, Donna; Shawn, Tim; Shedd, Dawn; Sheehan, Patrick; Sheeley, Sean; Sheffield, Jason; Sheldon, Cheryl; Shelton, Carol; Shepard, Sandra; Sheppard, Kay; Sherbo, Sherri; Sherwood, Krista; Shier, Bill; Shipp, Linda; Shutten, Robin; Sieve, Liz; Sifuentes, Judy; Silva, Blanca; Silva, Mandy; Silva, Sara; Silverstein, Diane; Simmons, Cathy; Simmons, Michael; Simmons, Samuel; Simmons, Sheila; Simpson, Sarah; Sizemore, Nicole; Skidmore, Samuel; Slack, Molly; Sliger, James; Slocombe, Albert; Smiley, Kris; Smith, Avonne; Smith, Christina; Smith, Ellen B; Smith, Jan; Smith, John; Smith, Kate; Smith, Keely; Smith, Kelly; Smith, Kevin; Smith, Leslie; Smith, Lucia; Smith, Nancy; Smith, Natalie; Smith, Ronald; Smith, Steven; Smith, Susan; Smith, William T; Sneed, Judy; Snell, Luise; Sofer, Gail; Sohan, Pam; Soileau, Fiona; Soliday, Gerald; Sommerfield, Katharine; Sonne, Frances; Sonnenberg, Judith; Soria, Luis; Soria, Stephanie; Sowell, Lesa; Sparshott, Deb; Sparshott, Mark; Spears, James; Spencer, Patricia; Spitta, John; Spottswood, Dana; Sprecher, Jean; Squires, Emma; St Clair, Laura; Staff, George; Stanford, Alexandra; Stark, Rachel; Stark, Robert; Starke, Dawn; Stauffeneker, Emily; Stedman, Deborah; Stedman, Deborah; Steel, Tom; Stefanov, William; Steffenson, Kim; Steinman, Kurt; Sterling, Karen; Stevenson, Natalie; Stewart, Donna; Stewart, Shizumi; Stillman, Myrna; Stinnett, Mike; Stippec, Barbara; Stippec, Rudy; Stlouis, Alfred; Stock, Barbara; Stodder, Rachel; Stollon, Courtney; Stone, Lisa; Stong, Stuart; Stpierre, Linda; Strader, Linda; Strasert, Brian; Strauser, Katherine; Strubbe, Thomas; Stubblefield, Louise; Sturrock, Wanda; Stutz, Anne; Sulak, Courtney; Sullivan, Karen; Summers, Jim; Summers, Susan; Sundarajan, Aditi; Surratt, Taylor; Sutton, Ann; Swain, Michelle; Swanson, Davie; Swanson, Leslie; Sweaney, Jennifer; Sweatt, Judith; Swiech, Carol; Swinford, Rita; Szabacsan, Terri; Szescila, Beth; Tacker, Haley; Tague, Kristine; Talbot, James; Talleagle, David; Tarazon, Tristan; Tarrant, Susan; Tassinary, Louis; Tatum, Margaret; Tavakoli, Vejheh; Taylor, Bryan; Taylor, Cheryl; Taylor, Deborah L; Taylor, Jim; Taylor, Mary Jennifer; Taylor, Matthew; Taylor, Suzanne; Tedter, Ross; Tegtmeier, Mary; Tejeda, Juan; Telfair, Ray C; Tenney, Lauren; Tenorio, Jesus; Terry, Laura; Thierry, Zoe; Thomas, Alison; Thompson, Andrea; Thompson, Clyde; Thompson, Jane; Thompson, Peter; Thompson, Stephanie; Thornton, Mary; Timmons, Mary; Tobey, David; Toledo, Edy; Tomlinson, Paul; Tomsu, Mary; Torres, John-Michael; Torres, Maria; Townsend, Desiree; Tran, Tam; Trevino, Chris; Trevino, David; Trevino, Marleny; Trominski, Anne; Troxell, Shawn; Truong, Ngan; Tsai, Yao-Yu; Tse, Tammie; Tu, Charles; Tucker, Hope; Tuckett, Natasha; Tudor, Debbie; Tullos, Ellen; Tuvim, Michael; Twidwell, Bunnie; Tyler, Dorothy; Tyrrell, Stuart; Utterback, Martha; Valdes, Rosario; Valdez, Erica; Vallandigham, Diana; Van Doorne, Vanessa; Van Natta, Michael; Van Zandt, Alice; Vanblargan, Joseph; Vander Stoep, Dorothea; Vanya, Rene; Varela, Alberto; Varela, Hector; Vassilakidis, Marie Sophia; Vassilakidis, Pat; Vaughan, Jan; Vaughan, Lelia; Vaughn, David; Vazquez, Raul; Vega, Noemi; Vera, Laura; Vernon, Steve; Vetkoetter, Peggy; Villareal, Raquel; Villareal, Raquel; Villareal, Raquel; Villarreal, Courtney; Villarreal, Jasmine; Villarreal, Joe Nick; Villarreal, John; Villarreal, Victor; Vincent, Laurel; Voight, Ashleigh; Volz, Mary;

Vonsenden, Sherry; W., Keith; Waas, Patricia; Wachsmuth, Brad; Wachsmuth, Heather; Waggoner, Julia; Wagner, Kimberly; Wagner, Laurie; Wahrman, Mathew; Walden, Margaret; Walker, Beverly; Walker, Billie; Walker, Carla; Walker, Scott; Walker, William; Wallace, Cathy; Wallner, Daniel; Walsh, Bedelle; Walsh, Michael; Walsh, Richard; Wamsley, John; Wanasek, Ruth; Ward, Donna; Ward, Tane; Warner, Audrey; Warner, Jody; Waskey, Susan; Wasserman, Kate; Watenpool, Chris; Watson, Brad; Watson, Carrie; Watson, Kirby; Watt, Gordon; Wayne, Richard; Weaver, Janice; Weaver, Susan; Weaver, William; Webb, Jenifer; Webb, W. D.; Weber, John; Weber, Marissa; Webster, Michael; Weiner, Martin; Welch, Barbara; Welch, Wendy; Wenig, Janet; Wessel, Fran; Westrich, Anne; Weynand, Sarah; Wharton, Becky; Wheelan, Liz; Whitaker, Penny; White, Lauren; White, Sus; Whiteside, Catherine; Whiting, Anthony; Whittaker, Aguedys; Whitwell, Giselle; Wick, Patricia; Wieme, Karla; Wilcox, Mary; Wilde, Nicholas; Wilk, Kristin; Wilkins, Niyi; Wilkinson, Angela; Willett, Linda; Williams, Elisabeth; Williams, John; Williams, Judy; Williams, Mary; Williams, Matt; Williams, Mia; Williams, Norman; Williams, Robert; Williams, Sandra; Williams, Sharon; Williams, Ted; Williams, Terrie; Williams, William; Willis, John; Wilson, Annmarie; Wilson, Jill; Windsor, Lucinda; Winebarger, Andrea; Wingfield, Cecil; Winn, James; Winslow, Betty Lou; Winston, Gloria; Winterrowd, Kirk; Winters, Amanda; Wise, Daniel; Wisel, Cathy; Wisgirda, Mary; Wisner, Betsy; Womble, Todd; Wonio, Diane Wonio, Michael; Wood, Anne; Wood, Jessica; Wood, Peter; Woodall, Sandra; Woods, Glendon; Woodul, Cheryl; Woodul, David; Woodward, N; Worsham, Cynthia; Wray, Anthea; Wright, Miriam; Wright, Patricia; Wright, Trigg; Wyche, Paula; Wyland, Jeanette; Wylie, Barbara; Ybarbo, James; Yelland, James; Yinger, Lynn; Yochum, John; Yoder, Paula; York, Melissa; York, Sondra; Young, Don; Young, Ginger; Young, Kimberly; Young, Mary; Youngblood, Clay; Youngblood, Kimberley; Zahorik, Pamela; Zambie, David; Zamora, Ilda; Zander, Suzette; Zapata, Rebecca; Zapata, Trena; Zawah, Barry; Zeller, Pam; Zhu, Ling; Zimmermann, Debbie; Zivley, Bruce

Group B

The Office of the Chief Clerk also received identical comment letters from the following persons who will be identified in the responses as **Group B:**

Acevedo, Ariadne; Almendariz, Priscilla; Alpert, Emily; Alvizu, Gladys; Bagley, Alita; Barajas, Christian; Barrus, Roger; Bautista, Justin; Best, Julie Edelstein; Borrayo, Rolando; Boyer, Jackie; Brewer, Judy; Brill, Linda; Brown, Mary; Burnell, Nytaah; Cantu, Bryan; Cantu, Joseph; Cantu, Roel; Carbiener, Karen; Cardenas, Gina; Cardenas, Kasey; Clements, Bonnie; Collazo, Gloria; Cruz, Josette; Cruz, Rick; Culp-Hook, Deborah; Davalos, Frank T; Davenport, Sally; De La Garza Und Senkel, Patrick; Dee, Laurice; Edquist, Kimberly; Ehramjian, Eric; Ekstrom, Nicole; Etheridge, Henry; Faulk, Judith; G., C.; Galvan, Gabriella; Garcia, Dora Elia; Garcia, Patricia S.; Gard, Marcia; Garrett, Terence; Garza, Wenceslao; Gelbert, Susannah; Gelineau, Virginia; Gibson, Jody; Gluntz, Carol; Gonzales, Alyria Victoria; Gonzalez, Andrea; Gonzalez, Rolando; Greely, Shannon; Greenwood, Kristopher; Guerra, Javier; Gutierrez, Anahi; Hamilton, Joyce Marie; Hescox, Cecilia; Hines, Marie Diane; Hinojosa, Rebekah; Hoenes, William; Holleschau, Karen; Jimenez, Pablo; Joe, Diana; Johnson, Diane; Keller, Jack; Keller, Linn; Kleemann, Kathrin; Kosar, Brooke; Langford, Jeanette; Lara, Stephanie; Lerma, Roseann;

Lillie, Nancy; Lippman, Susan; Lopez, Isuit; Lopez, Jose; Lopez, Mario; Lozano, Patricia; Madden, Wendy; Madole, Richard; Marshall, Pam; Martinez, Esther; McGuire, Meredith; McKinney, William; Mehis, Jim; Merrill, Sarah Bishop; Monroe, Baceliza; Montemayor, Claudia; Muller, Isabel; Munguia, Sara; Nieland, Carolyn; Nieland, Thomas; Olson, Charles; Pearl, Elizabeth; Pena, David; Perez, Betty; Reeves, Angie; Rhein, Herman; Rodriguez, Ramiro; Ruiz, Gerardo; Saldivar, Teresa R.; Sanchez, Bruno; Sandefur, Madeleine; Schamberg, Barbara; Sells, Greg; Shaak, Susan; Stephens, Sara; Stringfield, Juanita G.; Stringfield, Terry; Stueber, Sally; Teter, Rick; Tietz, Debra; Vernet, Yvette; Villarreal, Aaron; Villarreal, Armani; Vuolo, John; Walker, Jason; Williams, William; Workman, Janice

ATTACHMENT B:
Acronym/Abbreviation list

µg/m ³	microgram per cubic meter
lb/hr	pound per hour
28VHP	TCEQ LDAR program / set of conditions including quarterly monitoring and nondirected maintenance
AGRU	acid gas removal unit
ADMT	TCEQ's Air Dispersion Modeling Team
AERMOD	American Meteorological Society (AMS)/Environmental Protection Agency (EPA)/ Regulatory Model (Air Dispersion Modeling Program)
Annova LNG	Annova LNG Common Infrastructure, LLC; TCEQ Permit No. 144829
AP-42	EPA's compilation of air pollutant emission factors
APD	TCEQ's Air Permits Division
API	American Petroleum Institute
AQA	air quality analysis
ASTM	American Section of the International Association for Testing Materials
BACT	best available control technology
bbl	barrel
BOG	boil-off gas
CAA	Clean Air Act, <i>see also</i> FCAA, TCAA
CEMS	continuous emissions monitoring system
CFR	Code of Federal Regulations
CH ₄	methane
CO	carbon monoxide
Co2	carbon dioxide
Co2e	carbon dioxide equivalent
CPMS	continuous parameter monitoring system
de minimis	<i>See</i> SIL
DLN	Dry Low NO _x
DRE	destruction and removal efficiency
ED	TCEQ's Executive Director
EPA	United States Environmental Protection Agency
EPN	emission point number
ESL	Effects Screening Level
FCAA	Federal Clean Air Act, <i>see also</i> CAA
FERC	Federal Energy Regulatory Commission
FGR	flue gas recirculation
GHG	greenhouse gas
GLC	ground level concentration

GLC _{max}	maximum ground level concentration
GLC _{ni}	maximum non-industrial ground level concentration
H ₂ S	hydrogen sulfide
H ₂ SO ₄	sulfuric acid
HAP	hazardous air pollutant
km	kilometer
LDAR	leak detection and repair
LNB	low NO _x burner
LNG	liquefied natural gas
MAERT	Maximum Allowable Emissions Rate Table
MERA	TCEQ Modeling and Effects Review Applicability guidance document
mg/kg	milligram per kilogram
MMBtu	one million British Thermal Units (BTU)
MSS	maintenance, start up, and shutdown
N ₂ O	nitrous oxide
NAAQS	National Ambient Air Quality Standards
NAPD	Notice of Application and Preliminary Decision
NESHAP	National Emissions Standards for Hazardous Air Pollutants
NGL	natural gas liquid
NNSR	Non-attainment New Source Review
NO ₂	nitrogen dioxide
NORI	Notice of Receipt and Intent to Obtain an Air Quality Permit
NO _x	nitrogen oxides
NSPS	New Source Performance Standards
NSR	New Source Review
O ₂	oxygen
O ₃	ozone
OCC	TCEQ's Office of the Chief Clerk
PDS	Preliminary Determination Summary
PEMS	predictive emissions monitoring system
PM	particulate matter
Pm10	particulate matter with diameters of 10 microns or less
Pm2.5	particulate matter with diameters of 2.5 microns or less
ppb	parts per billion
ppm	parts per million
ppmvd	parts per million volume dry
PSD	Prevention of Significant Deterioration
QA/QC	quality analysis/quality control

RBLC	EPA's RACT (reasonably available control technology)/BACT (best available control technology)/LAER (lowest available emissions rate) Clearinghouse
RGV	Rio Grande Valley
RTC	The Executive Director's Response to Comments
SCF	standard cubic feet
SCONO _x	Catalytic absorption system to control both NOx and CO from natural gas-fired turbines without ammonia
SCR	selective catalytic reduction
SER	significant emission rate
SF ₆	sulfur hexafluoride
SFRGV	Shrimpers and Fisherman of the RGV
SIL	Significant impact level
SIP	State implementation plan
SNCR	Selective non-catalytic reduction
So ₂	Sulfur dioxide
SOAH	Texas State Office of Administrative Hearings
Space X	Space Exploration Technologies Corporation
TAC	Texas Administrative Code
TCAA	Texas Clean Air Act, <i>see also</i> CAA, FCAA
TCEQ	Texas Commission on Environmental Quality
Texas LNG	Texas LNG Brownsville LLC; TCEQ Permit No. 139561
TO	thermal oxidizer
tph	tons per hour
tpy	tons per year
ULNB	ultra-low NO _x burner
USEPA	United States Environmental Protection Agency, <i>see also</i> EPA
VOC	volatile organic compound
VPBCC	Vecinos Para el Bienestar de la Comunidad Costera
WHRU	waste heat recovery unit